MINING & PETROLEUM STANDARD

AND

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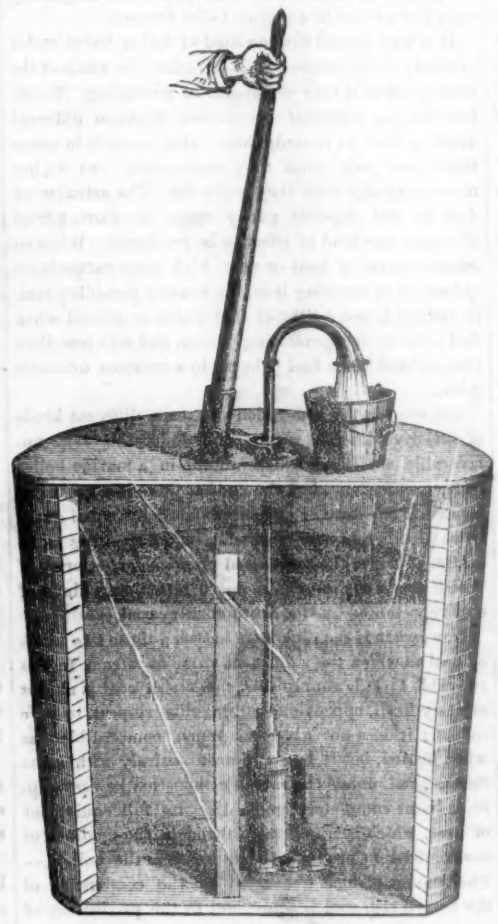
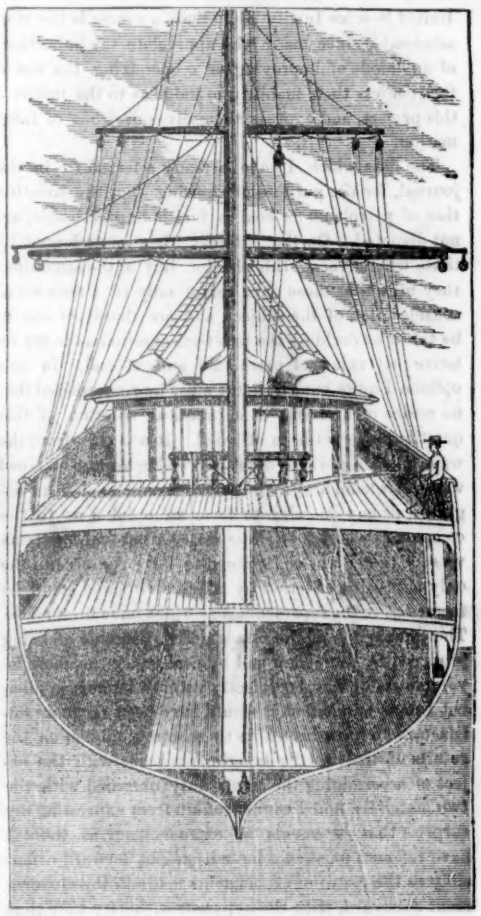




Recommendations of the American Submerged Pump,

OWNED BY THE AMERICAN PUMP MANUFACTURING CO., NEW YORK.

OFFICE, No. 40 DEY STREET.

Office of the American Ship Building Company, New York, Oct. 24, 1864.

I am very much pleased with the economy and simplicity of the American Pump, which I have examined with much interest. IT IS ADMIRABLY ADAPTED FOR SHIP PURPOSES, and from its GREAT POWER would do incalculable service in the event of LEAKAGE. It also works well in pumping, where the cargo consists of grain in bulk, and is free in its action.

AUGUSTUS WALKER, Marine Constructor.

New York, October 26, 1864.

To the American Pump Manufacturing Co.:

I have examined with much interest the working and results of the Double Action Force Pump which you are introducing in the market. For use as a Ship Pump and for Mining purposes, I consider it of great value, the results far exceeding anything of the kind presented to my observation, particularly for its GREAT POWER and SIMPLICITY. It will give me pleasure to recommend its introduction into the Navy. Please deliver as soon as possible the Pumps ordered by me last week, for the Mines of the Middlefield Fire and Building Stone Company of Massachusetts, and oblige, Yours, respectfully, CHARLES B. STUART, Consulting Engineer, U. S. N.

Office of the Neptune Iron Works, New York, February 6, 1865.

To the American Pump Manufacturing Co.:

I was very much impressed in examining the Pump manufactured by your Company. The originality of the design is in good keeping with its simplicity of construction—certainly very desirable qualities in all mechanical combinations. The extensive demand is the best proof of the popularity and favor it is receiving from the public. I have no hesitancy in recommending it to the inspection of those wishing THE BEST PUMP in the country.

CHARLES HUBBARD, JR.,
Superintendent.

Office of Donald McKay,
East Boston, Aug. 15, 1865.

Alvin Walker, Esq., Sec. American Submerged Pump Co.:

DEAR SIR:—In answer to your request for my opinion of your Patent Submerged Pump, will say, that for simplicity, compactness and durability, it has the appearance of being the BEST mechanical combination I have seen, having fitness combined with its simplicity, making it SUPERIOR to Pumps now generally used for general purposes on land. Also, well suited as a Ship Deck Pump, and, in my opinion, can be arranged to be readily used as a good Bilge Pump for Ships.

Yours truly,
HRMAN WINTER

CAMP PAROLE, ANNAPOLIS, Md., April 22, 1865.

Wm. Numson, Esq., President, Baltimore:

DEAR SIR,—The No. 2 Pump has been properly adjusted, and works to our entire satisfaction. Hoping you may be successful in introducing it to the public, we remain,

Very respectfully, yours, &c.,
JONES & CROWLEY.

(Letter from the President of Board of Common Council, City of Boston)

Boston, August 10, 1865.

A. Walker, Esq., Sec. American Submerged Pump Co.—

Dear Sir—In reply to your request for the results of the trial of one of your Pumps, I will briefly state the purpose for which it was needed, and the complete satisfaction attained. It was desired to clean out a well 42 feet in depth, in which there stood 10 feet of water; I had previously vainly tried several methods, in one of which one large Force Pump and as many buckets as could be used, succeeded in 10 hours in reducing the depth of the water to 9 feet, but beyond that nothing could be gained. I then put in one of your smallest Pumps, which drained the well completely in Six Hours: although the spring which fed the well yielded a stream of water about as large as a man's arm. I need not say that I consider the Pump fully capable of accomplishing what you claim for it. Yours truly, W. B. FOWLE.

I can fully endorse the above statement. GEO. E. LINCOLN.

PETROLEUM.

USE OF PETROLEUM OR MINERAL OIL AS STEAM FUEL IN PLACE OF COAL.

BY B. H. PAUL.

This subject continues to excite so much interest among those connected with steam navigation, and the statements which have been made by those who propose by means of petroleum or coal oil to effect a reorganization of our naval and mercantile marine, are so totally irreconcilable with all known principles relating to the application of fuel, that it will not be superfluous to illustrate this fact by reference to the opinions expressed and to the arguments used by several of the speakers in a recent discussion of the subject at the United Service Institution. Such a course is the more admissable since many who appreciate the importance of any mode of improving or economizing the use of fuel, confess their inability to judge as to the merits of this project, and express themselves desirous of information.

The data which I have already referred to in this journal, for the purpose of showing that the substitution of petroleum for coal as fuel is impracticable, are not disputed. On the contrary, they are adopted by those who advocate this change. But at the same time, they urge that those data relate only to a theoretical consideration of the subject, and are therefore not to be taken as deciding the practical question as to the relative fuel value of petroleum and of coal. In this opinion I quite concur, but it must be remembered that no means of arriving at a practical solution of this question have yet been afforded. It was only from the want of such positive data, expressing results obtained with petroleum and with coal, as would enable an engineer, or any one else, to form an opinion as to the comparative values of these materials as fuel for steam vessels, that I was constrained to have recourse to the only accessible criterion by which an opinion could be formed as to the representations which have been made. The comparison of the utmost effects capable of being produced by petroleum and by coal under the most favorable conditions, is perfectly valid so far as it applies; but I must admit that it would have been far more satisfactory to have been able to base my opinion on the results of trustworthy experiments made with the object of ascertaining the actual duty obtained with the two materials, and I cannot refrain from expressing my surprise that statements so extraordinary as those I have referred to, should have been put forward ostensibly as the result of experiments made in the Government dockyard, with the apparent authority they thus acquire, and without a vestige of practical evidence in support of them. Mr. Richardson has publicly declared that forty-two gallons of oil equal one ton of coal in steam-producing power. He admits that this requires proof, and he has promised that it shall be proved; but as yet the proof has not been furnished, nor was any approach made towards it in the papers read at the United Service Institution, on the 16th ult. It rests, therefore, with the advocates for the use of petroleum to remove the cause of the objection they made to the comparison between that material and coal upon theoretical grounds.

But their chief argument in favor of petroleum is, that this material can be used as fuel so that its capability may be rendered effective to a much greater proportion than is possible in the case of coal. Here again we are without any evidence of a practical nature in support of this proposition. No doubt it is a well established fact that different kinds of fuel do not always admit of equal effects being produced in generating steam, although their heating capability or calorific power may be the same. It is upon this ground that the advocates of petroleum take their stand, and Mr. Richardson states that, while one-half of the coal consumed in a marine boiler furnace disappears and is lost as soot and smoke, the heating capability of petroleum is fully utilized. If this were admitted, we should still be far from attaining that advantage from the use of petroleum in place of coal which Mr. Richardson represents by stating that one ton of petroleum equal five tons of coal; for, since the calorific power of petroleum is to that of coal as 1·5: 1, it follows that by fully realizing the calorific power of petroleum and realizing only half that of coal, the practical effects of these materials would be in the ratio of 3 : 1, which, upon the same supposition, would require the calorific power of petroleum to be 2·5 as compared with that of coal = 1·0. There is, therefore, some error in this; but without attempting to ascertain in what it consists, it will be more useful to inquire how far there may be —in the absence of those special data which are so much needed—any means of instituting a practical comparison between coal and petroleum in regard to the possibility of using the latter more advantageously than coal as fuel in a marine boiler furnace.

It is well known that no kind of fuel is burnt under ordinary circumstances, so as to realize the whole of the heating effect it may be capable of producing. Therefore the true practical comparison between different kinds of fuel as regards their value, consists in ascertaining not only what they respectively can do, but more especially what they really do. The actual work done by fuel depends partly upon its nature, partly also upon the kind of effect to be produced. When an intense degree of heat or very high temperature is required, as in smelting iron, the heating capability really utilized is not a tithe of that which is utilized when fuel is burnt for generating steam, and still less than that utilized when fuel is burnt in a common domestic grate.

But even in the generation of steam, different kinds of fuel give different results, and under the very unfavorable conditions which obtain in a marine boiler furnace, experience has shown that there is a great difference in the duty or effects produced by equal quantities of different coal possessing equal heating capabilities Hence the recognised practical superiority of Welsh steam coal over the more bituminous kinds of coal represented by the North country coal.

Now, what is the difference between these two kinds of coal to which their different value as steam fuel is referable? It is simply this, the Welsh coal is almost entirely fixed, approximating, in this respect, to pure carbon; it does not give out much combustible gas when heated, but it burns almost entirely within the furnace, and, unless the rate of combustion be very rapid, it burns completely, generating its full equivalent of heat, which is transferred through the medium of the combustion products to the water in the boilers.—The amount of heat generated by the combustion of the best Welsh coal is equivalent to the production of nearly 15 lbs. of steam from water at 212 degrees F. for each pound of the coal completely burnt. Of course this duty is never realized in practice, because the water has to be heated to the boiling point, and because the whole of the heat generated cannot be transferred to the water in the boiler, great part of it escaping in the combustion products. But the approximation to that theoretical duty will be greater in proportion to the perfect combustion of the coal, and to the absence of soot or smoke production. For every pound of soot or smoke produced, the possibility of generating at least seven pounds of steam will be lost, and the duty of the coal will be proportionately reduced.

The calorific power of the best bituminous coal is not appreciably less than that of Welsh steam coal, but it contains from 30 to 40 per cent. of volatizable substance, and consequently when heated combustible gas or vapor is evolved to that extent. This gas or vapor, amounting to something like 300 times the volume of the coal from which it is produced, mixes with the combustion products, and is thereby rendered less readily combustible. Under the influence of the draught, and by reason of its great bulk and mobility, it is drawn out of the furnace before it can be burnt, and, passing into the tubes of the boiler, the combustion is stopped partly by the cooling of the gas, and partly by the want of air, so that instead of generating its equivalent of heat it produces soot and smoke.

(Concluded in our next.)

GAS.

A NEW GERMAN GAS APPARATUS.

Since the first introduction of illuminating by gas, its advantages have become continually better known, and it has been sought to extend them as well to buildings situated apart from villages, factories, country houses and intermediate stations. There have, in fact, already been constructed, numerous apparatus, which, avoiding the expensive outlays of large establishments offer the means of producing cheaply and in a simple manner, an illuminating gas from coal and refuse matters of every kind. These small machines have already been fully proved in factories, stations, hotels, etc., and deserve a special recommendation. We wish to make our readers acquainted with one of these machines, constructed by Mr. Belon, a savant of great experience, and intended in the simplest and surest manner to convert into gas of a brilliant illuminating power, and at the least possible expense, solid matters, semi-liquids, and liquids themselves, each taken separately, alternating at will, or several together. We are not acquainted with the exact design, the details or description of the apparatus, but we know that it consists, besides the gasometer, of three parts.

In the first the object is principally the conversion of solid matters into gas. In the second, this conversion is accomplished together and simultaneously with solid liquid matters, or with matters sometimes solid, sometimes liquid according to circumstances. The two apparatus present likewise the advantage of being easily prepared for the use of coal or of peat, only requiring a certain charge to be made, an operation which occupies a quarter of an hour. The third, intended exclusively for the conversion into gas of refuse matter reducible into drops, dissolves for itself all semi-liquid and tarry substances, and melts, equally, pitch and rosin in order to render them capable of being turned into gas.

The principal advantages of this apparatus consists in—

I. The prompt development of gas. The retort filled with substances 4, 5, 6, 7 and 8, (see below,) only requires one hour and a quarter to two hours for perfect distillation, while coal requires 4½ to 5 hours.

II. The remarkable illuminating power of the gas, as an Argand burner with 32 holes burns in normal size, produces a light equal to 16 to 20 stearine candles six to a pound.

III. The extremely small consumption, as a similar burner with a flame 2¾ inches in height, produced by substances 1, 2, 3, only consumes two cubic feet per hour, and by substances 4, 6, 7, 8, three-and-a-half cubic feet.

IV. The simple construction of the apparatus which causes it to be readily adopted by those who are horrified by the complicated detail of the apparatus they have known in large works and by the great expense required to set them at work.

The following resumé of the gas product arising from the different waste material worked in the apparatus in question, will sufficiently show its advantages.

		Cubic feet gas.
1.	1 lb. of oil of rosin, as produced from the second stirring, furnishes.....	10·5
2.	1 lb. of the residuum from the manufacture of the oil of sun flower.....	10
3.	1 lb. of grease arising from the soap suds of one spinning of thread for cloth.....	9·5
4.	1 lb. of the waste arising from the cleaning of the greasy wool in the cards of one spinning of the draw net...	9
5.	1 lb. of the dry remains from the same manufacture.....	7
6.	1 lb. of the residuum with 10 per cent. of the residuum of a tannery.....	8·5
7.	1 lb. of the dry paring from a tannery...	9
8.	1 lb. of the sawings of pine and fir wood,	4·9

Coal gives per pound 4·25 to 4·75 cubic feet.

These machines furnish a gas so brilliant that they

diminish the consumption more than one half as compared with coal gas. The dimensions of the machine become necessarily less in consequence, and as a result the expense of construction. It is unnecessary to assert that these advantages are of the utmost importance to the districts for whom this machine is specially intended.

Mr. Derham, of Leipsic, furnishes this apparatus, which costs—without pipes of communication, which depend upon the locality—including the price of construction,

1,875 to 3,000 francs for 25 jets.
3,000 to 3,650 do. do. 50 do.
3,750 to 4,900 do. do. 100 do.

Estimating that each jet burns eight hours, daily, and consuming 3½ cubic feet of gas per hour.—*German Paper.*

TERRE HAUTE, IND., Oct. 1st, 1865.

Mr. Editor;

* * * * * *

By the way, the remarks of your correspondent "Reynolds," in one of your late issues, are very sensible, and in some points too true. May not the paucity of "scientific developments," by Gas Superintendents at least, be attributed to the fact, that the making of Gas, for the most part, is to many of them purely a "mechanical" operation, and that therefore the stockholders of most companies are glad to secure the services of men of "good *common* sense, industry, sobriety," and of ordinary mechanical abilities, wherever they can be obtained. It is a very small matter to the officers, or stockholders, or the community in general, whether there is a larger or smaller quantity of "olefiant gas, carburetted hydrogen, carbonic oxide, carbonic acid gas, &c., &c." present, or in what proportions during the process of manufacturing, provided the gas-light, when delivered to them, be bright and free from all smell.

What matter to them if in Clay Retorts the olefiant gas is decomposed, a portion deposited on the inside of the retorts, as carbon, and the balance sent to the gas-holder as light carburetted hydrogen, or whether in the same retorts from their being able to be worked at a greater heat, a less deposit of tar is made, and consequently more gas generated than in Iron Retorts at a cherry red heat. *Quantity* with them rather than *quality*, provided the gas will pass muster with those who do not, nor cannot determine the difference between ten, fifteen or seventeen candle power gas; the grand desideratum being, what plan of operations will secure the largest dividend. It is not a question with them how many thousand feet of gas a certain bench of retorts have made, the query is, "how is it your retorts burn out so soon, while at such a works they last one-third longer?" not knowing that the value of retorts should not be determined by the length of time they last, but by the number of thousands of cubic feet of gas that has been generated in them.

In nine-tenths of the Gas Works in this Country a "Governor," is a myth—a "Photometer," an istrument they have heard of or read about—a Pressure Register and Indicator, instruments they never saw, only as the cuts in the Gas Engineer's Pocket Almanacs have made known their construction or explained their use. Even the Meter, that wonderful mechanical achievement and exact measuring instrument, which is constantly under their eyes, yet its internal construction and operation is to them a sealed book. The Exhauster must appear to them a wonderful instrument, when they read the following *luminous description* by a writer in a Cincinnati paper, while discussing the knotty question of the contract to supply the city with gas:

"The exhausting air pump apparatus, one of the modern improvements introduced into gas works, was to produce from a bushel of coal a larger cubic amount gas: whether it sucks out of the coal a larger amount of carbon than by the old process or not is a matter of dispute, but there can be no doubt that it sucks into the Gas Company's treasury a larger amount of money on the principle of expansion, or stretching the article before it is measured!"

So I might go on through the whole catalogue of inventions which in large works are necessary adjuncts to a wealthy corporation, but in small ones are seldom seen. These are at the disposal of the Engineers and Superintendents, so that they can perfect themselves in the necessary scientific manipulations of coal, determining its value as a gas producer, testing the qualities of the gases generated, the per centage of yield, the quantity of residuum in the shape of tar, coke, &c.. &c. Is it astonishing, therefore, if under these circumstances, there are so few "scientific developements" in the manufacture of gas, brought before the public eye.—Even yourselves acknowledge that although gas, in all its varieties, is a very important item in the current operations of life, yet so limited is the interest, and so few available items of information to be had on the subject of illuminating gas and its manufacture, that Water, Mining and Petroleum are added to give value, zest and character to your valuable journal.

Yours truly, G. R.

HAMILTON, C. W., Oct. 10th, 1865.

To the Editor of the American Gas-Light Journal:

Dear Sir—Will you oblige by giving me in your next issue, the benefit of your experience as to the durability of gas holders. I have a holder 60 feet diameter by 20 feet deep, which has been in use for 10 years—it stands uncovered, and has been regularly coated with tar and turpentine every summer—the sides are of No. 16 sheet iron, and the roof the same, save in the centre, which is No. 18. The sides are in a perfect state of preservation, but the roof has this season shown signs of decay, in the appearance of numerous little circular holes, the corrosion, or decay evidently taking place inside—they appear more numerous along the joint just outside of where the iron is double—they are round, and though often near each other, yet the sheet is strong between. I would be glad to know whether this is the common fate of all gas-holders, or, if there is something special in this case to bring about dissolution at an earlier date than is usual.

Yours respectfully, CANADENSES.

IRON PIERS AND WAREHOUSES.

REVOLUTION IN THE PRESENT SYSTEM OF WHARVES.

We turn aside from the duties that perhaps only belong to our own specialty, for the purpose of expressing our high appreciation of this immense enterprise. We do this, because such enterprises mark epochs in the commercial prospects of a city. It may be asked why is this company so lauded above other corporations, for the purpose of enriching those who are engaged in them? We answer, that whatever profit may result to those who have conceived and inaugurated this great idea, is well deserved. But this is not the theme for laudation. The reason why our citizens should rejoice in the success of this particular scheme, is because it will be of incalculable benefit to the city in a sanitary as well as a commercial point of view, and it will be a benefit to all cities as an initial to a great commercial and sanitary reform.

The Tribune, a few days since, gave this subject a most full and interesting statement in detail, and we have selected such portions of it as we deemed most important.

The present dock and wharf accommodations of New York have long been inadequate, both in character and extent, to supply the needs of our shipping interests; and in the steady increase of our commerce, which the transient impediments interposed by the recent National struggle seem only to have inspired with renewed vigor—in the rapid growth in population and trade, and in the gradual, certain enhancement of those metropolitan characteristics which stamp this port as the Empire City of the Western World—those accommodations must every year become more painfully deficient. This subject has occupied the State and Municipal authorities for a period of nearly thirty years. Plans for improved piers have been earnestly solicited, and though many have been suggested, all, with one exception, have hitherto failed to secure approval. The reason of this failure was that all the plans, with the single exception indicated, involved one or the other of two general principles of constructing: 1. Walls of masonry, as at Liverpool, projecting from the shore into the water-way. II. Inclosed excavated basins, as at London, extending from the shore into the city.

The insuperable objection to the first of these plans was that piers of solid masonry would operate as partial dams across the rivers, and, by obstructing the flow of water round the city, cause an accumulation of the filthy deposits of our sewers, not only to the serious detriment of the health of the city, but also to the eventual filling in of the harbor, thus ruining the natural advantages which as yet remain. These are, indeed, the main objections to our present system of wooden piers, which, however, are fortunately temporary in their character, while the construction of stono wharves would be permanent obstructions, and would perpetuate all the present evils.

To the other plan, of inclosed, excavated basins, there were objections equally insuperable. New York is already felt to be unfortunately shaped, the extreme narrowness of the island on which it is built permitting of scarcely enough arteries for the natural flow of life and business from one end to the other. The deep and numerous indentations which would have to be made on either side, for the accommodation of our shipping on this London plan, would serve to reduce our already scanty breadth to an unbearable degree, by the destruction of avenues and thoroughfares which are at present found to be inadequate.

It will thus be seen that the difficulties in the way of improving our system of piers were by no means inconsiderable; and the announcement that an entirely new plan has at length been adopted, which promises not only to eventually surmount all these objections, but, perhaps, to effect a complete revolution in the entire system of wharf and dock structures, must be a matter of profound interest to all who have the prosperity of the American metropolis at heart.

THE NEW SYSTEM.

But wherever the responsibility for the present miserable contrivances may rest, the public will not be the less rejoiced to learn that an influential company has been chartered by the Legislature, with the privilege of building of six piers, on an entirely novel principle, which promises to effect radical changes in our system of wharf structures, and to eventually girdle the American metropolis with a grand chain of improvements of great value.

The new plan originated with J. Burrows Hyde, Esq., of this city. The piers will be 500 feet long and 100 feet wide, supported on iron tubular columns, thereby permitting a free flow of the water currents under them, and around and between the columns that support them.

THE COLUMNS.

Will vary from two and a half to six feet in diameter according to the depth of the bed of the stream and the weight with which each will be burdened. It is proposed to fill these hollow columns with a concrete, or what is called Roman cement, which was used in all the great architectural works of ancient Rome. This was for many years a lost art, but was re-discovered by an English antiquarian who introduced it into general use in modern engineering. It is capable of hardening under water as hard as the most solid granite in 30 days after its submersion; so that, if the iron should be gradually eaten away by oxydization, there would still be left the concrete columns to support the structure, as durable as adament.

THE WAREHOUSES.

The piers thus supported are to have erected upon them iron warehouses, thus bringing the storage and shipping in close contact. These warehouses are to be five stories high, the first story to be open on all sides, and to consist of the floor or deck of the pier, which is to be provided with cartways; and to be used for the discharge of such cargoes as are to be taken away im-

mediately, while the upper stories are to be inclosed and provided with hoisting apparatus, elevators, etc., where goods can be stored.

Each pier will thus be crowned by an imposing structure, partitioned off into ten warehouses, each 41 by 96 feet. Each pier or collection of warehouses will be provided with five powerful steam engines, which will work the hoisting machines, and also serve the purpose of fire-engines, to protect the structures, the shipping in the harbor and the adjacent buildings. The entrance to the piers will be provided with gates, after the manner of the present ferry bridges. These can be closed at night, and the piers, in the charge of watchmen, thus effectually secured from the thieves who now invest our open piers and wharves.

THE ADVANTAGES OF THE NEW PIERS.

The advantages of the new system are manifest and important

In a sanitary point of view, the improvement will be almost inconceivable. Dr. Swinburne, Health Officer of the port of New York, in commending the adoption of the system of Mr. Hyde, as a purely sanitary measure, says:

"I have examined your drawings for iron piers and warehouses combined, and fully concur in the practicability of that system set forth for preventing the deposit of sewerage matter under and between such piers, and this cannot be effected except by a plan that shall permit the free flow of the tide currents under the piers and at right angles with the sewer outlets through the bulkhead walls."

Another advantage is that our merchants will be saved the great expense to which they are now put in sheltering their goods an the open piers by means of tarpaulins, and the security from loss by fire will also be an enormous saving, both to private parties, and to the Government having dutiable goods in bond, while the operations of the gangs of thieves, which now infest our wharves, will be effectually stopped.

The bringing of the warehouses, as it were, immediately alongside the shipping, will also be an advantage of almost incalculable benefit; since it will not only obviate the present expense of trans-shipment, delivery, etc., incidental to a system of warehouses located at a distance from the wharves, but will also relieve the lower part of our Narrow island of the throng of carts now employed in carrying merchandise to distant places of storage.

The new system directly concerns the General Government, inasmuch as it will serve to prevent the great amount of smuggling, which the present imperfect structures facilitate; and it concerns the whole country, because the losses and expenses occasioned by the inconvenience incidental to the present system are added to the cost of commodities, and thus increase the burdens of general taxation.

THE NATURE OF THE COMPANY.

The New York Pier and Warehouse Company, which proposes to carry this new order of things into effect, is composed of wealthy and influential men, and was incorporated by an act of the State Legislature passed April 28, 1865. The charter is for 50 years, and the company is authorized to build six piers, supported by iron tubular columns, surmounted by iron warehouses; but in all other respects to be built on such plan, in such manner, and of such material as the Commissioners of the Sinking Fund of the City and County of New York shall designate. The act provides that one pier, with its set of warehouses, must be erected in two years from the passage of the act; the choice of water lots for the erection of new structures to rest with the Commissioners of the Sinking Fund, and the Commissioners of the Land Office.

As the cost for each structure complete is estimated at about $825,000, and the Company will also be compelled to remove the old piers which may be in their way, involving an additional and heavy expense; and as the benefits which will accrue from the iron piers are manifest, the Commissioners will of course readily allot the necessary places in a desirable locality, so that the Company may commence operations at once, and practically demonstrate the advantages of the new system.

Of course, the cost of the contemplated structures will necessitate an increase in the rate of wharfage, as those of European cities have, but the facilities which they would afford for loading and unloading vessels would be so superior to the present slow, cumbrous and expensive arrangements, that the expense of transacting business would be less than it is now. Even if it were not so, the inference is that nine-tenths of shipowners would prefer to pay a large advance in order to obviate the inconvenient and frequent ruinous delays which at present cause so much complaint among them.

The revolution to be effected by the iron piers, if successfully carried out, must have far grander results than those which were effected by the institution of the London docks, which, while they were probably the best system which could have been adopted there, were by no means a novelty, but a favorite mode of wharf structures in ancient cities. The strength, the durability and the beauty of the new system will render them adaptable to almost any port in the world; while the advantages which they present as a safeguard against fire, are manifest in the fact that all of our leading insurance companies were petitioners for tha passage of the bill incorporating the present New York Pier and Warehouse Company.

NEW ATLANTIC TELEGRAPH.

The provisional prospectus of another new Atlantic Telegraph Company has been issued in London. The company is to be known as Allan's Ocean Telegraph Company (Limited), from the circumstance that the cable which it is proposed to lay is to be constructed on the principle advocated by Mr. Allan, the well-known electrician and engineer. The capital to be raised is stated at £150,000; and it is proposed, in order practically to test the superiority of Allan's cable, to lay it in the first instance from Falmouth to Oporto and should this section work satisfactorily, to carry it across the Atlantic to Halifax. One of the advantages of Allan's cable is said to be that it can be laid without much expense; and it is calculated that, not being saddled with any loss through previous failures, the undertaking should pay as well at £4 a message of twenty words as its rival at 20*l*. As soon as the business increases, it is intended to lay another cable between Falmouth and Halifax direct.

A CURIOUS CALCULATION.

A rapid penman can write thirty words in a minute. To do this he must draw his quill through the space of one rod—sixteen and one-half feet. In forty minutes his pen travels a furlong; and in five and one-third one mile. We make on an avarage, sixteen curves or turns of the pen in writing each word. Writing thirty words in a minute, we must make four hundred and eighty-eight to the second in an hour, twenty eight thousand eight hundred; in a day of only five hours, one hundred and forty-four thousand; in a year of three hundree days, forty-three millions two hundred thousand. The man who made one million strokes with a pen in a month was not at all remarkable Many men made four millions. Here we have in the aggregate a mark three hundred miles long, to be traced on paper by each writer in a year. In making each letter of the ordinary alphabet, we make from three to seven strokes of the pen—on an average of three and a half to four.—*Commercial College Monthly.*

GLASS TURNING—A CURIOUS DISCOVERY

Glass may even be turned in a lathe. Strange as it may seem, this is literally true. No special tools even are needed; any amateur turner who has operated on either of the metals may chuck a piece of glass on his lathe and turn it with the same tools, and in the same way as he would a piece of steel, only taking care to keep the chips from his eyes. This strange discovery was made, almost accidentally, in the year 1860, by one of our most celebrated mechanical engineers, and might have been patented, but the inventor contented himself with simply putting it on record, and generously presented it to the nation. The consequence was, that no one cared or thought about it, and the idea has been suffered to lie nearly barren, though capable of being turned to great account. Let any amateur mechanic make the experiment, and he will be surprised at the ease with which this seemingly intractable material may be cut and fashioned according to his will.—*Chambers' Journal.*

IMPORTANT NOTICE.

To ADVERTISERS.—Our paper offers a superior medium as an advertising agent, to all those who manufacture or sell machinery or appliances of any kind for Gas, Mining, Water, Sewerage, the production or purification of Oils, &c. &c., not so much on account of a wide-spread circulation, as from the fact that it goes directly to the hands of those who are constantly using and requiring machines and improvements for these branches, and who look through our columns for information where to procure them. The class of people who read our paper not only peruse our pages of reading matter, but read the advertisements as well, for the reason that they are directly interested in all things pertaining to their business. We therefore ask, with confidence that we can do them justice, all parties having machinery or improvements of any kind for either of the objects to which our paper is devoted, to send in their advertisements and avail themselves of these advantages. It will be observed that our tems for advertisers are very reasonable.

MANUFACTURE OF MAGNESIUM.

The American Mangnesium Company of Boston, have just commenced the manufacture of magnesium from dolomite or magnesian limestone, by the Sonstadt method, and are producing the metal, both crude and refined, in considerable quantities. The principal use of this hitherto very rare metal is to burn for light. It is burned in the form of fine wire. The light is (1) achromatic, (2) intense, (3) has good actinic properties, and is (4) very penetrating. Hence (1) colors can be distinguished as in sunlight, (2) a wire a hundredth of an inch in diameter gives a light equal to 74 stearing candles, (3) actinograms—ambrotypes and the like—can be taken as by day-light, and (4) the light can be seen 28 miles at sea. Its actinic power is shown by the fact that while its intensity is but 1-525th that of the sun at noon, on November 13, its photographic power is 1-36th that of the sun The heat it yields in burning is infinitesimal compared with gas, oil, or candles.

ACTION OF PETROLEUM ON THE HUMAN SYSTEM.

Landering relates the case of a man who swallowed a quantity of petroleum; the greater part he vomited again. It caused a strong burning sensation in the tongue and throat, which were reddened and became swollen. The stomach and bowels were also affected, and slight gastro-enteritis ensued. For several days the urine and sweat smelt strongly of the oils, and the odor was especially strong under the arm-pits. The patient was very weak for a time, but recovered—*Chem. Central Blatt.*

ARSENIC.

Of all metalloids arsenics is most easily isolated by electricity, for it is almost as good a conducter as a metal. By means of an apparatus (known as simple in electro-chemistry), all the metalloid they contain may very rapidly be extracted from arseniferous substances. Place a solution of arsenical matter in a platinum ves

sel, plunge a zinc wire into the liquid, and the arsenic will appear on the platinum; by prolonging the action the whole of the arsenic is extracted from its compound. This method may be varied in different ways, and renders valuable service in medico-legal researches, it is much superior in sensibility to the process actually in use.

ANOTHER THEORY ABOUT PETROLEUM.

A theory which has the merit of being at once plausible and less repugnant with ascertained facts that many which have been suggested, has been proposed in the Pittsburg Oil News. One of the most rational and more generally accepted theories respecting petroleum supposes that substance to be a product of the destructive distillation of coal by means of the earth's internal heat. There is being discussed just now, however, a theory which is the exact converse of this; a theory according to which, instead of petroleum being formed from coal, coal was formed from petroleum. It is well known that "all organic substances which are not themselves volatile, such as wood, flesh, and all other vegetable and animal matters, yield, when subjected to the influence of heat below, dull redness, tarry oils, having in all cases the general character of petroleum, and differing only according to the specific differences in the materials from which they may have been obtained," and the new hypothesis supposes that the materials from which our coal beds were formed were converted in the first instance into such "tarry oils," and that these oils, under long continued action heat, gradually lost nearly all their oxygen and the chief part of their hydrogen, the residuum gradually used in the manufacture o "gold for smelters and silver smiths' crucibles, composed of chemical combinations capable of withstanding the most intense heat without undergoing material change or sustaining damage. This will undoubtedly prove of great value to the owners of the property, and perhaps produce a new phase of manufacture in New York. At present the most of the material used in making crucibles has to be imported from foreign countries.

AN INGENIOUS IMVENTION.

Among the many ingenious inventions which have been called into being by the necessities required in manufacturing and laying the Atlantic cable, none perhaps is more simple, beautiful and perfect, than the arrangement devised by Professor Thompson, the scientist of the telegraph company, for measuring the rate of leakage of the electric fluid from the charged cable.—This is accomplished by what is known as a torsion balance, an instrument for estimating very minute forces by the motion of an index attached to the ends of two very fine wires on threads which twist around each other. The index in this case is a very minute steel needle, the slightest motion of which is exagerated ad libitum, by the simple device of attaching to the needle a mirror, which reflects the light of the lamp on a scale placed at a distance, showing a little line of light which traverses many inches, while the index needle makes a movement scarcely appreciable to the naked eye. The most trifling leakage, for hundreds of miles of cable, may thus be detected, and almost the precise point of escape indicated by the operator. So exquisitely delicate is this test, that while the cable was being manufactured a minute flaw in one of the four coatings of gutta-percha was detected, and its locality, within a few yards pointed out, so that the length within which it occurred was cut out. So intricate and multiform have the devices of the artisan become, in these modern times, that it is now almost a sine qua non that science should go hand in hand with art in nearly all ur daily avocations.

EMPLOYING HYDROCARBONIC OIL FOR GENERATING STEAM.

Mr. P. Hayes, of the Victorian Chemical Works, Footscray, has made another successful trial of his new invention for generating steam, from Williamstown to Melbourne. It was intended to have made a final test of his novel scheme by running a train a considerable distance on the Victorian line. for the purpose of ascertaining its carrying powers with loaded wagons, but his plans were thwarted by some unforseen mismanagement on the part of the authorities. Mr. Hayes' discovery is the result of two yerrs' close study, and is a new means of raising oil in lieu of coal, which, if corried to a successful issue, will be attended with great economical and other advantages. The nature of the new process is to convey a hydro-carbon oil through heated retorts, to enable the gas to come in contact with hydrogen. This produces a large volumo of smokeless flame, extremely pure and brilliant. It is unattended by anything of an explosive nature, and the heat therefrom is sufficient to produce steam as fast as coal or coke in an ordinary furnace. The only alteration made in the locomotive is the fixture, in that part of the tender in which the coal is usually deposited, of an iron cistern or tank, constructed to contain about 250 gollons of hydro-carbon oil. In order to permit of oscillation between the engine and tender, a small pipe with a strong leathern joint, is carried from the tank to the bottom of the fire box, where three small retorts are fastened in place of the erdinary bars. The oil runs into these. heat is applied underneath, and directly the gas begins to form, hydrogen is thrown in, by very simple means, and the contact creates the flame above alluded to, which, on passing through the tubes of the boiler, generates steam with surprising rapidity; and, instead of occupying two hours, as is customary by the old system, Mr. Hayes can, by his new process, get up steam in a locomotive with cold water, high pressure of 110 lbs., in the short space of three-quarters of an hour. The engine, as on previous occasions, was brought from Williamstown to Melbourne by Mr. Haighton, foreman engineer of the Government workshops at Williamstown, steam being on this occasion at 110 lbs. This gentleman speaks in very high terms of the new principle, and his opinion is supported by many of the rnilway officials. Mr. Hayes declares that his patent is applicable to any ordinary steam-engine boiler. Presuming the affair to turn out a success, the saving to the locomotives in many respects would be great, seeing that she oil is inexpensive, and can be obtained in large quantities; and, as applied to marine engines, the invention would be most valuable from economy of space. Another great advantage is, that the money which at the present time to be transmitted to New South Wales for coals would be kept in Victoria, the ingredients with which steam is produced being derived from a mineral product which is found in inexhaustible quantities in this colony.—*Melbourne Age.*

NEW MINERAL.

A new mineral of lead has been discovered in Chili, containing ten per cent. of iodine. Iodone has lately become very valuable, on account of its extensive use in photography, and of the discovery, by Dr. Hoffman, of a new dye, having this element amongst its constituents. It is said that one cargo of the new mineral will represent a fortune. As a further illustration of the progress that mining adventure is making in Southern America, a mine of bismuth ore has recently been opened in Bolivia, about two-thirds up the highest of all the peaks of the Andes—the Iljampu Mauntain. Bismuth, also, has lately increased in value; and 15,000 feet above the level of the ocean, only slightly beneath the line of perpetual snow, men are setting to work to obtain it.

THE COAL MINES OF THE WORLD.

M. A. Burat, in a work entitled "Situation de l'Industrie Houilllare en 1864," gives the following as the statistics of the extent of known coal fields and their annual production:

	Extent in acres.	Tons.
British Isles	3,879,470	86,000,000
Franc	864,850	10,000,000
Belgium	370,650	10,000,000
Prussia and Saxony	741,300	12,000,000
Austria and Bohemia	296,520	2,500,00
Spain	370,650	400,000
North America	74,130,000	20,000,000
Total	79,453,444	140,900,000

As regards France, the coal basin of the Loire, which is only 61,775 acres in extent, furnishes 3-10ths of the whole of the coal raised in that country.

A NEW WATER ENGINE.

The London Mining Journal has the following:

The engine is supplied with water from the corporation mains on a pressure of 60 or 70 lbs. to the square inch. The water enters a pair of water engines, each of which possesses a pair of cylinders and pistons.—The cylinders oscilate upon trunnions, and the effect of this oscillation is to reverse the valvular arrangement, thereby causing a continuous rotary motion, which puts the hoist in action. The engine has been applied with success to printing machines, to a mortar grinding machine, and other apparatus requiring a motive power on a small scale. The experiments made on this occasion were quite satisfactory. The hoisting of three sheets of wool, or tops, each weighing about 5 cwts., did not occupy more than seven minutes, and the quantity of water consumed in the process was about 120 gallons. A series of experiments followed, and including the sheets raised in the first experiment, no fewer than fifteen sheets of wool, weighing in the aggregate 3 tons 15 cwt., were raised from the ground floor to the highest story of the warehouse in the short space of forty-five minutes. The entire quantity of water consumed was only 570 gallons, the cost of which was about 6½d.

ECONOMIC MAGNESIUM LIGHT.

In a communication to the Paris Academy of Sciences, Prof. Carlevaris, of Mondovi, Italy, stated that when magnesium wire was ignited in atmospheric air, or in pure oxygen, the most luminous effects were not manifest till a certain quantity of oxide had been formed, and was raised by the heat produced to an excessively high temperature. The light in this case, as in the combustion of carburetted hydrogen, as in that of hydrogen in contact with platinum, and as in the drummond arrangement, is derived from the solid particles raised by the flame to a great heat—a heat which dissolves and volatilises platinum, but leaves the oxide of magnesium solid, fixed, and intact. To raise this oxide to the temperature necessary to give the greatest light, it should be presented to the flame in as small a quantity and in as large a volume as possible, which is done by employing a spongy oxide thus obtained—A piece of chloride of magnesium is exposed to the flame of the oxhydrogen blower, in contact with a piece of carbon. The chloride of magnesium is rapidly decomposed, leaving the spongy oxide, which gives the light in question; or by simply replacing the chloride with the carbonate of magnesia of commerce, the same effect can be produced.

COMBUSTIBLE MUD.

At the proceedings of the Asiatic Society of Bengal, lately, says the London Builder, Major Risely described a combustible mud, which exists in large tracts, notably in the Pertabghur district in Oudh, where there is a jheel or swamp of it, which looks like ashes and smoulders like wood. The mud, when dried, blazes quite freely. It has been tried by a locomotive foreman, and found to give very nearly as much steam as wood. The Calcutta analyzers call it an impure peat, resulting from the continued deposition of vegetable matter at the bottom of a marsh. It is curious that the natives, though well aware of its properties, make no use of it; their reason being that it owes its origin to "enormous sacrifices of ghee and grain burnt in situ by godlike people in old time."

There are now in existence no less than fourteen hundred and fifty-seven oil companies, with a total capital of eight hundred and sixty-nine million five hundred and ninety-four thousand dollars.

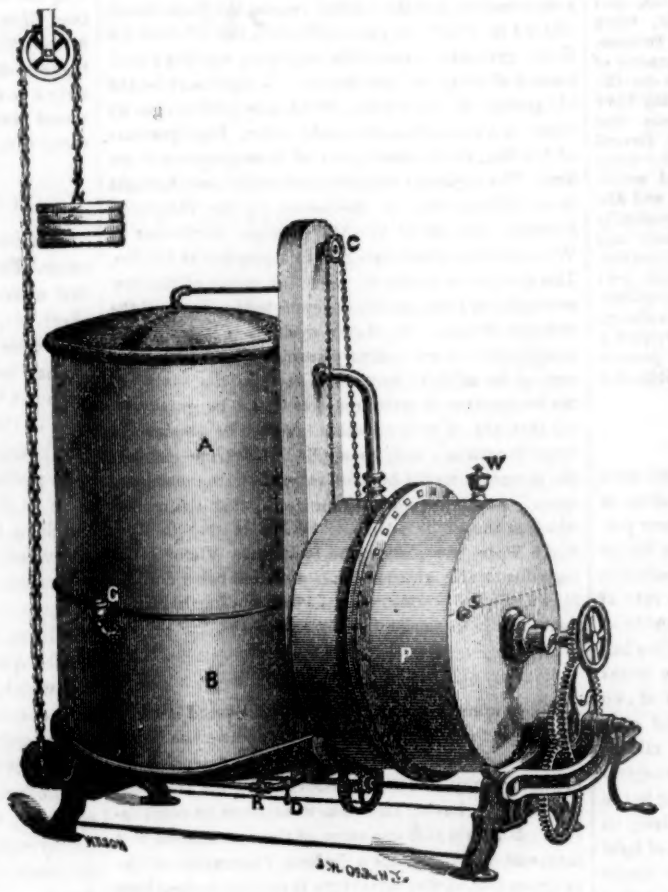
EMPIRE STATE GAS MACHINE,

LEVI STEVENS' PATENT, FOR SUPPLYING,

Dwellings. Stores, Factories and Public Buildings.

THE GAS GENERATED BY THIS MACHINE

Is a mixture of the vapor of hydro-carbon with common air. The mechanical devices employed are such as, from a long experience and critical examination into the nature of the elements brought into use, seem best adapted to secure a certain and satisfactory result. GASOLINE, the liquid employed, is the more volatile portions of Petroleum, of a specific gravity of 0.6587. This liquid exposed to the action of this machine is vaporized, and a close mechanical mixture of the vapor with common air is effected. The value of the gas produced, its permanency, its illuminating quality, and freedom from liability to condensation, depend almost entirely upon the perfect and uniform character of this mixture. Hence the great importance of mechanical means adapted to secure all the conditions requisite in a Portable Gas Machine.



CASH PRICE-LIST OF MACHINES COMPLETE;

(Boxed and delivered on the cars at the Manufactory.)

No. 1,	$150,	5 Argand Burners.	
do. 2,	250,	do.	do.
do. 3,	350,	10	do.
do. 4,	450,	20	do.
do. 5,	600,	35	do.
do. 6,	1,000,	60	do.
do. 7,	1,500,	125	do.
		250	do.

This machine will produce the most brilliant and steady light, without Fire or Heat, and is warranted to operate in every respect as represented.

The EMPIRE STATE GAS MACHINE is the most SIMPLE and EFFECTIVE MEANS KNOWN FOR PRODUCING GAS WITHOUT HEAT.

Its action is automatic, feeding itself with constant supplies of Gasoline, thus securing steady and uniform supplies of Gas. The gas produced is equal to the best known Illuminating Gas. It is as economical as any other, and is adapted to a wider range of use for Lighting, Heating and Mechanical purposes. It will maintain its illuminating power under as great a degree of cold as any other. It is free from danger with the ordinary care in using gas. Its remarkably pure and steady light is pleasant for the eye. It renders it easy for persons living remote from street gas pipes to enjoy the luxury of a pure GAS-LIGHT, at a COMPARATIVELY SMALL COST, AND WITH LITTLE TROUBLE.

☞ The public are invited to witness its operations at our store. GASOLINE will be supplied by us, at market prices, or may be obtained from the various other sources of supply now going into operation.

MITCHELL, VANCE & Co., 620 Broadway, New York,

Manufacturers of Chandeliers and Gas Fixtures of every description. Also, Chandeliers, Brackets, Lamps, &c., for Coal Oil, adapted to Churches, Public Buildings, Dwellings, &c.

GLYCERIN

For Wet Meters, Gasoline Machines, Hydraulic Presses, &c.

We warrant our Glycerine free from acid and not to corrode the Meter metal, or to congeal or freeze at a stated temperature—also, not to evaporate to any extent. The advantages and savings derived from the use of our fluid can be testified by many Gas Light Companies which we have supplied. We only refer to the certificates of H. J. Miller, Esq., President of Cincinnati G. L. and Coke Co., and Dr. J. Lawrence Smith, Professor of Chemistry in the Louisville College, and President of the Louisville Gas Co.

HARTMAN & LAIST,

Office No. 71 Main street, Cincinnati,—Chemical Works on Providence st, and Miami Canal, near Findlay st.

CERTIFICATE.

Office Louisville Gas Co., Louisville, June 28, 1865.

This is to certify, that the Louisville Gas Co. have used for about two years, the Glycerine prepared by Messrs. Hartman & Laist of Cincinnati, in their Wet Meters, and have in all instances found it to give most perfect satisfaction. Prior to the use of the above Glycerin, we had employed that manufactured by other parties, and we consider H. & L.'s superior to any we used.

J. LAWRENCE SMITH, President.

Office Cincinnati Gas Light and Coke Co., July 7, 1865.

This will certify, that Messrs. Hartman & Laist of Cincinnati, furnished this Company with Glycerin for Wet Meters some two years since. It has proved very satisfactory, having resisted the action of frost during two winters and evaporating not more than six per cent. per annum, as guaranteed by them. The standard being, for density, 15 deg. Beaume's scale. They were the first to introduce it practically to this Company. H. J. MILLER, President.

☞L. BRUCKMAN, 107 Warren street, up-stairs, Agent for New York.

GLYCERIN

For Filling Wet Meters,

AND OTHER PURPOSES.

We solicit attention to Glycerin for filling Gas Meters in place of high wines, or any other substance — Our Glycerin is superior to anything ever used for the purpose, being entirely free from corrosive property, and made from the same material as the finest article for medicinal use. It will not evaporate, consequently there will be no further expence necessary in filling Meters. Glycerin of 15° Baume will stand a temperature of 14° below zero without congealing, and the more concentrated the greater degree of cold it will stand.

We have been engaged in Manufacturing Glycerin the past 18 years, and from our advantage in material and the large amount we make, are enabled to offer it lower than any manufacturer in this country. Finding the wide range that Glycerin would assume in Pharmacy, the Arts and for mechanical purposes, we have entered into the manufacture of articles adapted to the various uses and are now prepared to offer it adapted to every purpose for which it can he used at less than any article now in competition with it. We annex the following letter from S. S. Stratton, Esq., to show practically its advantages.

OFFICE OF THE COVINGTON GAS-LIGHT CO.
COVINGTON, KY., Feb. 18, 1864.

MESSRS. W. J. M. GORDON & CO.:

Dear Sirs,—It affords us great pleasure in testifying to the superiority of the Glycerin Fluid purchased from you for filling the Wet Meters now in use by the Covington Gas-Light Company.

The difficulty of finding a non-evaporating and anti-freezing mixture for Wet Meters, has, in my opinion, been overcome by the use of your Glycerin Fluid.

I have had it in constant use for the past four months, and during that period the thermometer has ranged as l ow as 14o below zero, and after careful examination, I have found the fluid in the same condition as when first put in the Meters, and without the slightest discoloration.

Its non-evaporating quality does away with the hitherto unavoidable expense of filling the Meters monthly, and renders Wet Meters no longer objectionable.

In fact, I can cheerfully recommend it as being cheaper and better than any other Fluid or Mixture now in use.

Very respectfully,

S. S. STRATTON, *Sup't Cov. Gas Co.*

The following Gas Companies are using our Glycerin, to whom we refer—

☞Auburn, N Y—Covington, Ky—Portsmouth, O—Springfield, O—Newburgh, N Y—Ann Arbor, mich—Cincinnati, O—Portsmouth, N H—Xenia, O—Richmond, Ind—Annapolis, md—Dayton, O—Painsville, O—Zanesville, O—Rahway, N J—Baltimord, md—Davenport, Iowa—Manchester, N H—Urbana, O—Boston and Sandwich Glass Company—Buffalo, N Y—Philadelphia, Pa—Ripley, O—Piqua, O.—Terre Haute, Ind—Memphis, Tenn—Keokuk, Iowa—Pomeroy, O.

☞For machinery, concentrated Glycerin possesses superior advantages, not becoming solid at the freezing point of mercury and not affected as oils are by exposure to the atmosphere.

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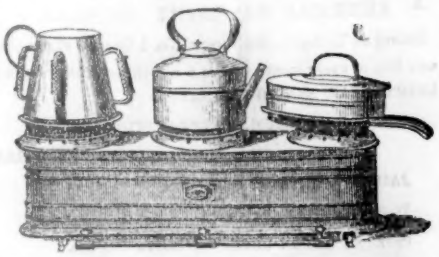

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Positively guaranteed free from Smoke or Smell.

Will Heat Offices, Parlors, Dining, Sleeping, and Bat Rooms. Also,

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The EAGLE GAS STOVES and RANGES have been in use for over Three years, and are found to be the most SIMPLE, COMPLETE and PERFECT Arrangment for HEATING and COOKING, in every respect, ever invented, and to do the Work with LESS TROUBLE, in LESS TIME and at LESS EXPENSE than any Coal or Wood stove.

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For Cooking and Heating.

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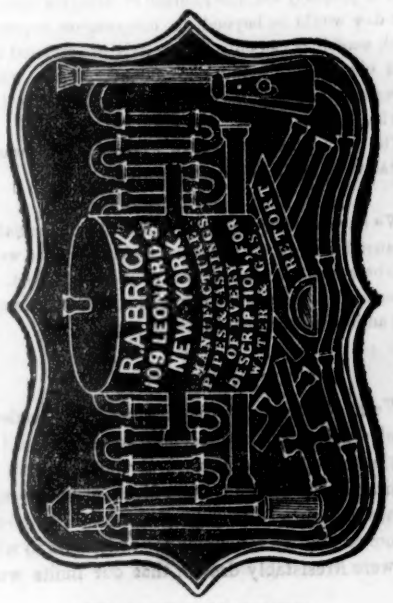

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AND BANDS COMPLETE.

THE MINING & PETROLEUM STANDARD AND AMERICAN GAS-LIGHT JOURNAL, is published at Tribune Buildings, No. 1 Spruce st. on the 2d and 16th of every month, and is a recognized official organ of—

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The Mining and Petroleum Standard

AND

AMERICAN GAS-LIGHT JOURNAL,

PUBLISHED ON 2D AND 16TH OF EVERY MONTH.

JAMES W. BRYANT, DR. C. W. TORREY, } Editors.

MONDAY, OCT. 16, 1865.

☞ We shall have twenty or thirty vols. of our last year's issue bound, which we will furnish to subscribers at $3 each, or non-subscribers at $4.

☞ Our subscribers would confer a favor upon us by remitting *checks, or Post Office Money orders*, as we are frequent losers by money sent by mail.

Anthony's improved Shingle and Heading Machine, Patent July 25th, 1865, is undoubtedly an improvement upon any sawing Shingle Machine ever before patented. If the saws are kept in order—and it is easy enough to do it—the work must go on regularly, and if properly fed, the number of shingles turned out per day would be beyond an extravagant requisition. Such machines can only be properly appreciated by actual observation. We recommend parties wanting shingle, or heading machines, to examine this before buying one.

The "gold medal" Buckeye Mining Machine was presented with its creditable reputation.

We have received a copy of the "Commercial and Financial Chronicle," and upon looking it over we find it to be a well conducted and ably edited sheet. We commend it tocommercial men,and all others who would like an interesting and industrial paper.

AMERICAN INSTITUTE FAIR.

We had determined to present to our readers, a detailed account of the specimens of American Genius that have been exhibited to the public in this admirable display of Art and Mechanism, but upon a more experienced review of the subject we frankly confess that we welcomed the conclusion to which we were irresistably drawn, that our limits would not permit such a review, for we were not aware of the magnitude of the task that we intended to impose on ourselves—for as we wended our way through the labyrinths and saloons of the immense building in which the fair is held, each successive object that met our gaze was a new theme for admiration and wonder—and the multitude and variety of them almost bewildered the mind, so that the task appeared herculean to describe them *seriatum*. Therefore, we abandoned that design, and felt that our limited sheet, and it may be, our limited ability, were not equal to the task. But as in a few days this display of wonderful capacity will have been dispersed, and have passed into history, it becomes the duty of every American journal to pay a general tribute of respect to the evidences of genius, and of the rapid progress of American Art, as diplayed in this magnificent collection.

Truly, Progress is the signet of mind, and the happy organization of the institutions of this, our glorious Country, more than any other on this mundane sphere, developes mind and stimulates progress. For while we pause for a moment to review those inventions which are passing before us, some new creation of genius forces us on, else we should be lost on the road, for to stop is to be irretrievably behind. where the march is, to use a military phrase, always on the "double-quick."

But now that the present pageant is about to be brought to a close, we may contemplate the immediate means by which all these wonders are fostered and nurtured to maturity—and here truth compels us to say that the American Institute has been an engine of incalculable power in developing all these benefits. not only to our own Country, but to the well being of the world.

We have regretted to observe that some of the newspapers of the day find fault with the administration of the affairs of this really gloriously grand design. Will they not learn that where the scope of action is so immense, that some imperfections must creep in, for perfection belongs not to humanity, and error is the attribute of man. Let our friends of the press take counsel by the wise words of the noble Poet, that it needs but little skill

"To find or forge a fault,"

and then they will come to the conclusion that the true duty of a journal, in cases like this, is to commend the good that their fellow men do, and leave to those who are steering the ship of mind on this particular voyage, and who have the chart immediately before them, to determine its proper course.

This Institute has enabled us to gather in one view very many things that genius has produced in the past,—yet we cannot lose sight of the fact that there are thousands of productions of American inventive skill which it was inconvenient, or impossible to have presented here—and while contemplating the works which it is the vehicle of presenting, we can see that monuments of true greatness more durable than marble, are reared to the honor of Genius, and that her brow is encircled with a coronet more brilliant than diamonds.

This exhibition demonstrates beyond cavil, that the American Institute has been of incalculable benefit, and the exhibition of 1865 is evidence of the indomitable perseverance, wisdom and generosity of its governors, for in all things it has been a most complete success.

It is a fact not generally known that the active men of the Institute are principally gentlemen more interested in Agricultural interests than Mechanical, and we would suggest that more attention be given by Mechanics to this Institution in the interim of their annual exhibitions, than they have hitherto bestowed.

SELF-ACTING APPARATUS FOR LIGHTING BUOYS.

We take from the London Builder the following interesting articles:

Mr. Alfred Verlaques has proposed a self-acting apparatus for lighting buoys, by gas, in maratime and river channels. In both applications a successful contrivance would render great service to navigation by diminishing the enormous loss of life and property annually occurring. This plan consists in adapting to the buoy a contrivance exactly similar to that of the philosophical lamps so well known to every student. A vessel containing diluted sulphuric acid is enclosed in the buoy: in this is suspended, from a bell receiver, a mass of zinc placed at such a level that when the water in the bell has been driven out by the hydrogen produced by the decomposition of the water, the zinc shall be dry. At this stage a cock is opened at the summit, and a jet of gas is projected upon spongy platinum, ignition being the immediate result. The receptacle for the platinum can be made to revolve by the impact of the gas so as to present different colored lights. As fast as the gas escapes, the acid-water rises in the bell until it is full and the light is extinguished.—Meanwhile, the zinc has become again immersed, and more hydrogen is being produced, so that after a certain time the gas will escape again and be ignited.—Thus a self-acting intermittent light will be established. There is much to be done before this idea, however ingenious, can, if at all, become of practical use.

The originator says himself, that the chief problem lies in the opening and shutting of the exit of the gas, as regulator of the whole system. As to the feeble quantity of light developed by pure hydrogen gas, it can be rendered more intense by hydrocarbon essences; also, the saturated solution of sulphate of zinc can be emptied by a very simple contrivance into the sea, and fresh solution forced in. A little study will serve to perfect all these details of working.

PETROLEUM REVIEW.

Oct 2.—Crude has been in moderate demand and steady at 32 to 33c. Refined is firm and in fair demand at 52 to 55c., the latter rate for white, and 70 to 72 for free.

3.—The market is moderately active and firm at 32½ to 33c. for Crude; 53 to 55c. for Refined in bond, the latter rate for White, 71 to 73c. for do. free.

4.—Receipts to-day, 3,731 bbls.; the market is heavy and lower; we quote Crude at 32c.; Refined in bond, 52½ to 53., and do free, 71 to 73c.

5.—There has been only a moderate inquiry for Crude during the past two or three days, owing to the scarcity of vessels to load for Europe, prices were weak and at the close heavy at 31½ to 32c. Refined in bond is scarce, in demand and firm, closing at 52 to 54c. Free oil is quiet at 70 to 72c. At Philadelphia there were twelve vessels loading for Europe.

6.—The market is inactive and prices are nominal at 32c. for Crude, 50 to 52c. for Refined in dond, and 70 to 71c. for Refined free.

7.—The market is dull, and prices are nominal at 32c. for Crude; 52c. for Refined in bond, and 70c. for do. free.

9.—Crude is dull and heavy at 31½ to 32 cts. Refined in bond is firm at 52½ to 54 cts. Refined, free, is dull at 70 to 72 cts.

10.—The market for Crude is dull and heavy at 31½ 32 cts. Refined in bond is firm at 52½ to 54 cts. Refined free is inactive at 70 to 72 cts.

11.—The market is quiet, but prices are without essential change. We quote crude at 31½ to 32 cts. Refined in bond at 52 to 54 cts. and do. Free at 70 to 71 cts.

12.—The market is very dull, and prices are nominal we quote Crude at 31½ cts. Refined in bond, 52 to 54 cts. and do. Free at 70 to 73 cts.

13.—The demand has been fair, and the market a shade firmer, sales of Crude at 32 cts. Refined in bond, 52 to 54 cts. and do. Free 70 to 72. cts.

NEW YORK MINING EXCHANGE.

New York, Oct. 14, 1865.

	Bid.	Asked		Bid.	Asked
Copper Stocks.			***Gold Stocks.***		
Aztec	7		Benton	1	1¼
Bedford	1	1	Consol'd Gregory		28⅞
Boston	4½	5	Corydon	—	3
Caledonia, A. P.	10	12	Gunnel	3¼	4½
Canada	3¼	4	Great Western	—	8
Carp Lake	3	5	Hope	—	9
Central	—	—	Isaac's Harbor	¾	⅞
Columbian	—	24	Manhattan	—	9
Copper Falls		-	Mariposa	44	44¼
Clifton	—	81	Montana	½	1
Dacotah	—	5½	New York	2½	3
Derby	⅞	1⅛	N. Y. & Nova Scotia	⅝	1¼
Douglass	—	—	Quartz Hill	9¼	10
Evergreen	18¼	20	Quicksilver M'g Co	81	82
Flint Steel River	12	13⅛	Rocky Mountain	—	10⅛
Frue	2¼	5	Smith & Parmelee	7	12
Grand Portage	—	—			
Hancock	12¼	14	***Coal Stocks.***		
Hamilton	—	6	American	98	100
Hilton	5	6	Ashburton	—	25
Hudson	1	2	Central	62	65
Huron	32	33	Cumberland	61	62
Indiana	8¾	9¼	Del. & Hud. Canal	206	208
Isle Royale			*Hampshire & Balt.	104	110
Keweenaw	—	6	Pennsylvania	213	215
Knowlton	7	10			
Lafayette	1	2	***Lead Stocks.***		
Manhattan	—	—	Bucks County	⅝	¾
Mendota	—	—	Clute	1⅛	1⅞
Merrimac	4¾	5⅛	Erie	—	20
Minnesota	33	37	Macomb	3¼	5
New York, A. P.	2	3½	Placentia Bay	1⅛	1⅜
N. J. Consolidated	4	4¼	Sussex	⅜	⅞
Norwich	—	6	Wallkill	3⅛	6
Ogima	5	6¼			
Ontonagon	3	4⅛	***Iron Stocks.***		
Penn	—	11½	Copake	8	10
Providence	1½		French Creek	⅝	1
Quincy	96½		Teal Lake	4½	6
Reliance	1¼				
Rockland	12½		***Miscellaneous.***		
Superior	8¼		Rutland Marble	17	20
Sharon Consolidated	—		* *Ex. div.*		

FOR SALE.

A set of Purifying Boxes, 5 x 10 feet, with covers and Hoisting Apparatus, Center Seal, Connecting Pipes, &c., with 8 inch openings, nearly new, and in perfect order. Offered at a low price on account of being too small for the works. Apply to, or address Hartford City Gas Light Co., Hartford, Con. 39-40

FOR SALE.

One set of four Purifiers, with Centre Seal, Drums, and 12 inch connections all complete, of the following dimensions:

Purifiers—19 feet 4 inches long, 8 feet 4 inches wide and 3 feet 1 1-2 inches deep, in the clear, with seven layers of sieves.

Centre Seal—5 feet 11 1-2 inches in diameter by 2 feet 10 inches deep.

Also—one Cast Iron Meter Case, 10 feet square, with 12 inch connections.

Address P. O. box 1400, New York City. [37-39

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For terms, apply at the office of the Company, Empire Buildings, No. 71 Broadway, Room 33, New York City.

Experimental Trial of Cameron Coal Company's Coal, from "Mount Hope" Vein,

Made at the Philadelphia Gas Works, March 20th, 1865, Charges, 100 lbs. each.

Pounds of Coal carbonized,	3,600
Cubic feet of Gas made,	16,285
" " per lb. Coal carbonized,	4 52·100
Coke made, in pounds,	2,480
" in bushels,	63
Tar made, in gallons,	22

Illuminating power, 5 feet Batwing—14 44·100 Candles.

No. 34 Pine Street, New York, April 5, 1865.

George Warren, Esq., President Cameron Coal Co.:

Dear Sir—The analysis of the Coal I received from you, as from your "Mount Hope" vein, results as follows:

Volatile matter,	26.00	per cent.
Carbon (of Coke),	69.40	"
Ash,	4.60	" —100.00

The volatile matter consists of crude oil, ammoniacal water, and gas. The crude liquor product amounted to 14 gallons per ton; the illuminating Gas, 4,522 cubic feet per 1,000 lbs. coal. The Coal weighs 65 lbs. per bushel. The Coal is remarkably free from sulphur, and the Gas of excellent quality.

Yours, very truly,

(Signed,) A. K. & S. C. EATON, Chemists.

Manhattan Gas Light Co., New York, April 24, 1865.

Mr. George Warren, President Cameron Coal Co.:

Dear Sir—The result of the examination of the Coal from the "Mount Hope" vein is as follows:

One ton (2,240 lbs.) yielded 9,500 cubic feet of 13 75·100 candle Gas, and 40 bushels of coke, weighing 1,550 lbs. The Coke has a good appearance, and burns very well, with but little hard clinker. Had the Coal been fresh mined, the result would have been better.

Analysis of the Coal.

Volatile matter,	29.00	pr. ct.
Fixed carbon,	67.20	"
Ash,	3.80	" —100,00

Analysis of the Gas.

Olifiant Gas, hydro carbon vapors,	4.75 pr. ct.
Carbonic oxide,	5.75

Yours very respectfully,

(Signed) JOS. A. SABBATON, Engineer.

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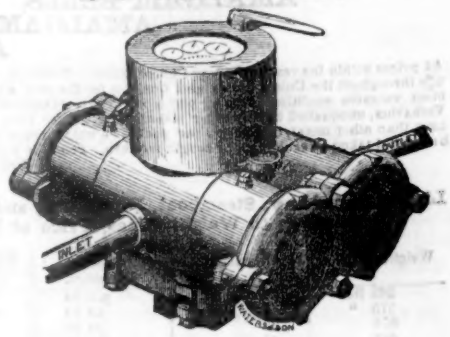

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Weight of Bells.	Diameter.	Price of Bells without Hangings.	Price of Patent Hangings.	Price of Bell and Hangings complete.
225 lbs.	26 inches.	$56 00	$15 00	$71 00
275 "	42	69 00	18 00	87 00
375	36	94 00	22 00	116 00
450	84	112 00	25 00	137 00
600	02	150 00	30 00	180 00
750	39	188 00	35 00	223 00
1,000	61	250 00	42 00	292 00
1,200	48	300 00	45 00	345 00
1,400	50	350 00	50 00	400 00
1,600	52	400 00	54 00	454 00
1,800	55	450 00	60 00	510 00
2,000	58	500 00	62 00	562 00
2,500	60	625 00	72 00	697 00
3,000	63	750 00	85 00	835 00
3,500	66	875 00	87 00	962 00
4,000	69	1,000 00	100 00	1,100 00
4,500	72	1,125 00	113 00	1,238 00
5,000	75	1,250 00	125 00	1,375 00

List of Prices, Weights, and Sizes of Farm, Hotel, Steamboat, Schoolhouse, Shop, and Factory Bell.

These Bells are fitted with Yoke, Standard's Crank and Bolt, complete for use.

Weight of Bell and Hangings.	Diameter.	Cost of Bell and Hangings complete.
15 lbs.	7 inches.	$3 75
20	8¼	5 00
35	10	8 75
50	12	12 50
75	16	18 75
100	18	25 00
150	20	37 50
200	22	50 00
250	24	62 50

Larger Sizes made to Order at 25 cents per pound.

Guarantee.—All Bells sold at the above prices WARRANTED against breakage by fair ringing, for TWELVE MONTHS from time of purchasing. Should one fail, a new bell will be given by returning the broken one.

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It consists of seventy-two parts Oxide of Iron, and twenty-eight parts Cement Lime Stone in the one hundred pounds.

It has much more body than red or white lead. It is warranted perfectly water and fire-proof and to withstand a greater heat on metals, without scaling, than any other paint in use.

It is a perfect cover for all kinds of iron, tin, or wood-work, out-houses, and canvas coverings.

Prevents and arrests the corrosion of metals, and is not affected by the action of salt, gases, acids ammonia.

It hardens under water, as has been fully demonstrated by its application to gas-holders, by many of the largest gas companies in the United States; which companies having thoroughly tested its properties as herein claimed, pronounce in its favor over any other paints in the market, even though sold at double its price.

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For patching boilers and making joints, it is considered superior to red lead, or any other preparation.

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This Paint requires no more oil than dry lead or zinc, and much less than the ordinary mineral paints. It is free from any waste, and possesses a spreading and covering power unequaled.

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THE MACKENZIE PATENT GAS EXHAUSTER

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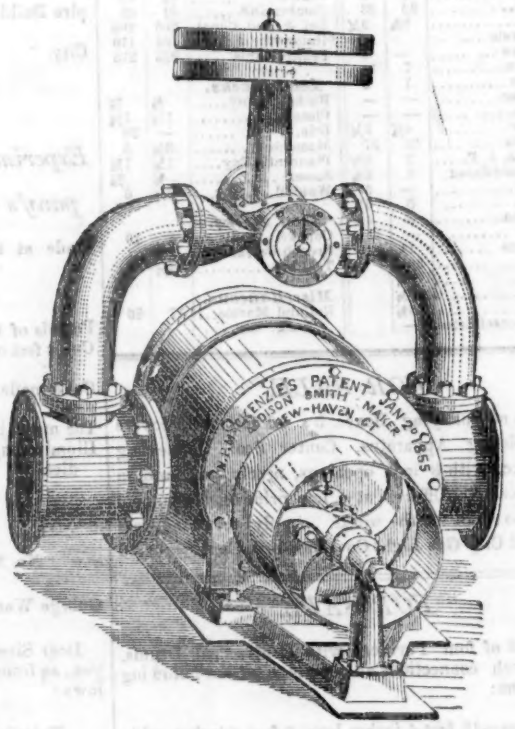

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WEST VIRGINIA OIL & COAL CO.
71 Broadway, [$3,000,000.]
A. F. Ball, Pres. F. A. Miller., Sc.

Great Improvement
IN
Sewing Machines.
EMPIRE
SHUTTLE MACHINE!

Patented February 14th, 1860.

Salesroom, 536 Broadway.

This Machine is constructed on entirely new principles of mechanism, possessing many rare and valuable improvements, having been examined by the most profound experts, and pronounced to be SIMPLICITY and PERFECTION COMBINED.

It has a straight needle, perpendicular action, makes the LOCK or SHUTTLE STITCH, which will NEITHER RIP nor RAVEL, and is alike on both sides; performs perfect sewing on every description of material, from Leather o the finest Nansook Muslin, with cotton, linen, or silk thread, from the coarsest to the finest numbert.

Having neither CAM nor COG WHEEL, and the least possible friction, it runs as smooth as glass, and is

Emphatically a Noiseless Machine!

PRICE OF MACHINES,
COMPLETE:

No. 1, Family Machine, with Hemmer, Feller, Gauge, Braider, & Corder, complete. - - - $60
No. 2. Small Manufacturing, with Extension Table, $75
No. 3. Large Manufacturing, with Extension Table, $85
No 3. Large Manufacturing, for Leather, with Rolling Foot and Oil Cup, 100

One-half hour's instructions is sufficient to enable any person to work this Machine to their entire satisfaction.

Agents Wanted in all Towns in the United States, where Agents are not already established. Also, for Cuba, Mexico, Central and South America, to whom a liberal discount will be given Terms, invariably CASH on delivery.

T. J. McARTHUR & CO.,
536 Broadway.

WILCOX & GIBBS SEWING MACHINE

It is entirely noiseless.
A patented device prevents it being turned backward.
The needle cannot be set wrong.
It received the Gold Medal of the American stitute in 1868.
InSend for a circular containing full information, notices from the press, testimonials from those using the machine, &c.

JAMES WILLCOX,
Manufacturer, 508 Broadway, New York
Principal Offices:
NEW YORK—508 Broadway.
BOSTON—282 Washington street.
PHILADELPHIA—715 Chestnut street.
CHICAGO—133 Lake street.
CINCINNATI—70 West 4th street.
LONDON—135 Regent street.
HAMBURG—44 Hermann street.
PARIS—82 Boulevard de Sebastopol.
ST. PETERSBURGH—15 Gorochovay.
VIENNA—9 Wildpretmarket.
BRUSSELS—12 Rue Croisade.
SYDNEY, AUSTRALIA—292 Pitt street

GAS-BURNERS.

T. G. ARNOLD,
MANUFACTURER OF
GAS-BURNERS
And Importer of SCOTCH TIPS,
224 and 226 West 21st street,
formerly No. 447 BROOME ST., New York.
Mercury Cups, Portable Sockets, Burner Pillars, Burner Pliers, &c., &c.

C. GEFRORER,
Manufacturer of
GAS-BURNERS,
For Lighting and Heating Purposes.
GAS HEATING AND COOKING APPARATUS; FITTERS' PROVING APPARATUS, &c.
No. 111 South Eighth St.
Philadelphia.

WOODEN PURIFYING TRAYS
PATENT
Conically Slotted Solid Wood Sieves
FOR GAS PURIFIERS.

The Conically Slotted Solid Wood Tray or sieve was patented 21st October, 1862, and all persons are cautioned against purchasing them of any other person except the subscriber. The following companies, are now using these trays.

Manhattan, New York,
Metropolitan,
New York
Albany,
Troy
Brooklyn, L. I.
Williamsburgh,
Citizens
Baltimore Md.
Louisville, Ky.
Chicago, Ill
Cambrid
And numerou

Orders eceived by mail or otherwise.
JOHN L CHEESMAN.
147 Avenue C New York City

WEST'S IMPROVED PUMPS, the most Simple, Durable, and Powerful, and the Cheapest in use.
J. D. WEST & CO.,
No. 40 Cortland street,

JOSEPH LENNIG,
1615, 1617, and 1619 Francis St.,
Above Ridge Avenue, Philadelphia, Pa.,
MANUFACTURER OF
WET & DRY GAS METERS,
STATION, SHOW, & EXPERIMENTAL METERS,
Photometers, Pressure Registers, Indicators, and Gauges, Governors, Meter Provers, Centre Seals, Fluid Gauges, &c.
GAS APPARATUS
Of the most reliable and approved construction manufactured and on hand at the
UNION GAS METER WORKS.

D. PARRISH, Jr.,
GAS ENGINEER
And Contractor for Coal or Oil Gas-Works.
Estimates given for Gas-Works, Gas-Holders, or any Gas Apparatus.
205 1-2 Walnut st., Philadelphia, Pa.
Box 1956, Post Office.

To Manufacturers of Petroleum Gas.

For sale, Parrish's Patent Gas and Air Mixer, adapted to all works using Petroleum or other oils, by which rich Petroleum Gas is mixed, after it leaves the holder, with a proper proportion of air, giving it the greatest illuminating power, without smoke, through any burners. The apparatus being attached to the outlet pipe, requires no alteration of the works.

Apply at the Gas-Works of St. Nicholas Hotel, No. 63 Mercer st., N. Y., where one can be seen in operation; or address D. Parrish, Jr., St. Nicholas Hotel, New York city, or No. 1416 Arch street, Philadelphia.

TO GAS COMPANIES.

THE UNDERSIGNED DESIRES TO undertake the supervision of several small Gas-works, to visit and examine them as often as may be necessary; to obtain and inspect their coal, castings, fire-brick, and other materials; and to manage their general business in such a manner that they shall be under such supervision as is now attainable in large works, at much increased cost. Also, to advise as general Consulting Engineer and expert in practical chemistry.

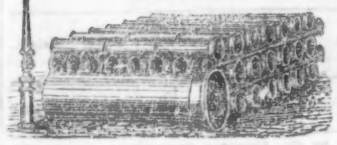
CHAS. M. CRESSON,
Late Asst. Engineer of the Philadelphia Gas-works
417 Walnut st., Philadelphia.

THE AUBIN
GAS-WORKS COMPANY,
Of Albany, N. Y.,

Now contract their works to make 10,000 feet of good Gas from 2,000 pounds of *hard* wood and 40 gallons of kerosene tar, *before payment can be demanded;* and the charcoal is worth the cost of the wood.

Many Village Gas Companies can be referred to.

R. D. WOOD & CO.,
MANUFACTURERS OF
CAST-IRON PIPE, RETORTS, &c.
Office, 400 Chestnut Street,
PHILADELPHIA.



Carrington & Co.'s
GENERAL
PURCHASING
AGENCY,
In Connection with all the Expresses,
No. 30 Broadway,
NEW YORK.

Established 1854.

Purchases to order ANY article wanted from New York, (or from Europe,) for ladies' or gentlemen's use or wear,—comfort or luxury—from a cameo to a cashmere—a sea ring to a steam-engine.

Goods purchased at current City prices, and forwarded by Express, or as directed.

Commission, Five Per Cent.

Remittances, with orders, can be made by Express if preferred, as all Express Agents will take orders, receipt for and forward funds, and see to return of Goods.

SPECIAL CIRCULAR.

The Adams Express Company, appreciating the need of a capable medium connecting with the various Express Lines, through which personal and other orders for goods from this city, can be satisfactorily supplied, do recognize CARRINGTON & CO GENERAL PURCHASING AGENCY as such a medium for filling orders for every description of goods wanted from New York, and commend it to the attention of the public, and of our general and local agents, recommending our agents to extend to it all reasonable aid, by facilitating the distribution of its cards and circulars, and making known the advantages it affords.

ADAMS EXPRESS CO.
By W. B. DINSMORE, Prest.
NEW YORK, June, 1864.

We cheerfully concur in the above recommendation of the Adams Express Company.
AMERICAN EXPRESS COMPANY,
By HENRY WELLS, Prest.
UNITED STATES EXPRESS COMPANY,
By D. N. BARNEY, Prest.
WELLS, FARGO & CO.,
NATIONAL EXPRESS COMPANY,
By J. A. ULLEN
HARNDEN EXPRESS,
By L. W. WINCHESTER, Supt.
KINSLEY & CO.'S EXPRESS,
By E. LITTLEFIELD, Supt.
HOPE EXPRESS COMPANY,
A. D. HOPE, Supt.
BREESE & CO.'S EXPRESS,
By STEPHEN BREESE, Supt
NEW JERSEY EXPRESS COMPANY,
By GEORGE R. DUNN, Sup

The Greatest Improvement yet in the Sewing Machine Art!

A CURIOSITY WORTH SEEING!

Please send for circular with sample of sewing.

These Improved Machines SAVE ONE HUNDRED PER CENT. of thread and silk, and make the LOCK-STITCH alike on both sides.

They require no instruction to operate perfectly, except "the printed directions."

No change in sewing from one kind of goods to another.

And no taking apart to clean or oil.

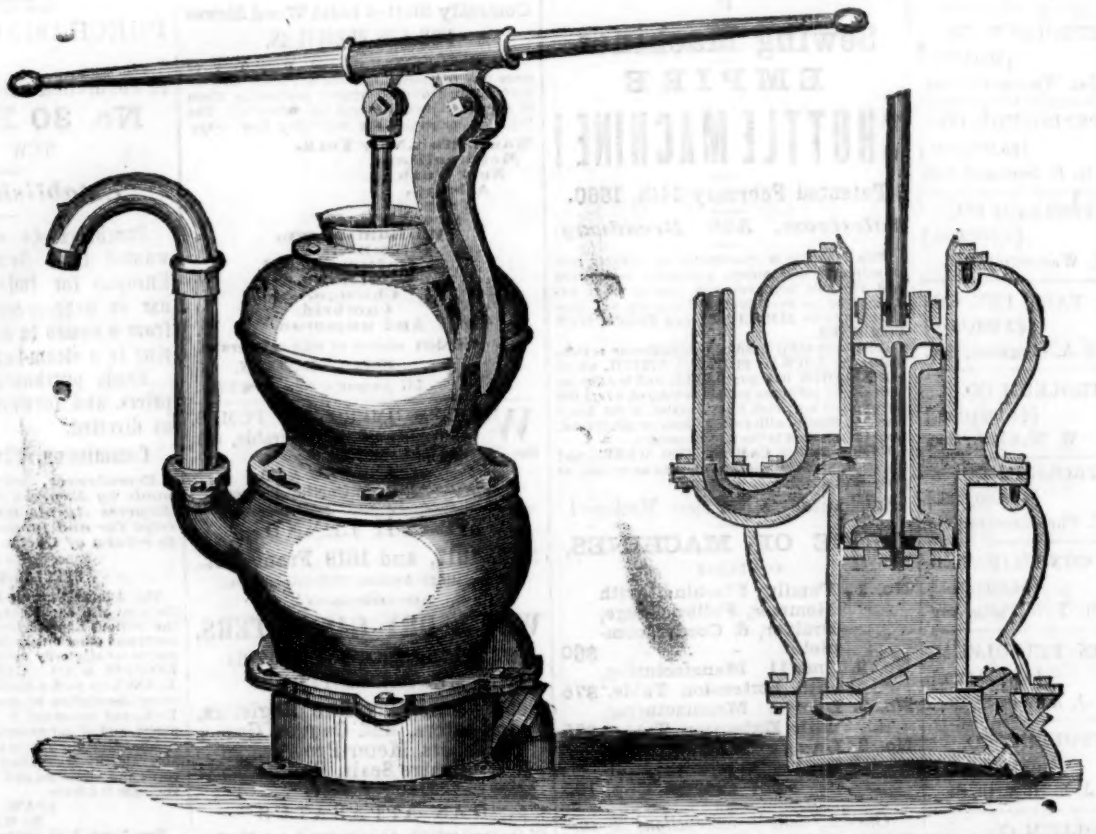
Our NEW MANUFACTORY is now complete, with all its machinery and tools entirely new, and is already rapidly turning out Machines which for BEAUTY and PERFECTION of FINISH are not surpassed by any manufacture in the world.

N. B.—Should any Machine prove unsatisfactory, it can be returned and money refunded.

Agents wanted in counties not vassed by ur own agents.

Finkle & Lyon S. M. Co.
[No. 538 BROADWAY, NEW YORK

WEST'S IMPROVED PUMP.



LILLIE'S

CELEBRATED

Chilled and Wrought Iron Safes,

WROUGHT IRON FIRE-PROOFS,

LOCKS AND VAULT DOORS.

These Fire-Proofs are manufactured to supply a demand for Security Against Fire, less expensive than my celebrated and superior Chilled and Wrought Iron Burglar and Fire-Proof Safes.

They furnish similar and equal security to the Safes generally manufactured in the different cities, but are SUPERIOR to them in their Fire-Proof qualities and durability, the iron being effectually protected from rust in any climate, and the Fire-proof not subject to lose its utility by age. This is an important advantage gained to the purchaser, as Safes often rust out and become worthless in two or three years.

To substantiate my position, those purchasing these Fire-Proofs are at liberty, by giving me due notice of time and place of trial, to test them by fire with any other Safe of the same size; and should they not prove superior, I will refund the money, or a new Fire-Proof, as the purchaser may decide.

LIST OF SIZES & PRICES OF WROUGHT IRON FIRE-PROOFS

Outside.				Inside.			
No.	Height.	Width.	Depth.	Height.	Width.	Depth.	Price.
6	40	31	27	31	21	15	$150
5	34	21	26	24	21	14	125
4	31	27	25	22	18	13	110
3	30	24	24	21	15	12	100
2	28	22	23	20	14	12	75
1	24	19	20	17	11	10	50

Sample of Fire-Proof Safe at Office of the Am. Ad. Agency, 389 Broadway, N. Y.

PRICE LIST.

LILLIE'S CELEBRATED CHILLED & WROUGHT IRON SAFES.

BANK, FIRE, AND BURGLAR SAFES.
Folding Doors, D Lock.

OUTSIDE.				INSIDE.			
No.	Height.	Width.	Depth.	Height.	Width.	Depth.	Price.
	In.	In.	In.	In.	In.	In.	
1	66	50	29	54½	39	18	$950
1½	59	50	26	48	39	15	800
2	53	44	27	42½	33	15	600

MERCANTILE F AND B SAFES.
Folding Doors and Monitor Locks.

3	50	42	27	40	32	16	$500
4	46	42	27	36	32	16	450
4½	38	46	27	28	36	16	450
5	42	38	27	31½	27½	15	350

Single Doors and M. Lock.

6	38	25	26	27⅞	23½	15	$250
7	34	31	26	24	21	14	200
8	31	28	24	21	18	13	175
9	30	24	24	21	15	12	140
10	26	22	22	19⅛	13½	12	120
11	24	20	18	17	17	10	100

HOUSE SAFES.

SIDE BOARD	$600
DINING ROOM	350
PANTRY (No. 1)	275
PANTRY (No. 2)	150
DUODECAGON BANK LOCK	100
MONITOR SAFE do.	50
SAFE do.	10

NATIONAL BANK SAFES,
With 2 Inside Burglars and 1 D and 2 M Locks.

OUTSIDE.			INSIDE.			
No.	Height.		Hei	Width.	Depth.	Price.
	In.		In.	In.	In.	
1	68		53	39	18	$1,200
2	61		48	39	18	1,050
3	57		42½	38	18	900

BANK VAULT BURGLAR SAFES,
With Folding Doors and D Lock.

0	68	53	27	64	48	20	$1,000
0½	61	56	27	55	46	20	800
1	57	47	27	49	40	20	600

BANK VAULT BURGLAR SAFES,
Single Doors and D Lock.

2	53	32	26	49	28		
	42	36	22	38	32	19	
4	36	31	20	32	27		
5	30	24	18	26	20	14	

BANK VAULT DOORS AND FRAMES,
D and S Lock.

No.	Height clear.	Width clear.	Depth adjustable.	Price.	Weight.
	In.	In.	In.		
1	72	27	20	$400	3,000
2	72	27	20	275	1,500

Orders received and filled at net cash prices, by the AMERICAN ADVERTISING AGENCY, 389 Broadway, New York. All Safes shipped from Troy free of cartage.

Corresponding Depart. Forest and W... Orders Depart. N. Myron.

WEST'S IMPROVED PUMP.

Anti-Freezing, Double-Acting, Forcing, and Lifting

These Pumps have now been in general use a number of years, and give better satisfaction than any other, and are recommended as

THE BEST!

by CAPTAIN ERICSSON and other eminent engineers. We can refer to thousands using them, a guarantee that all will recommend them. They are more simple in construction, and work easie and cost less than all others.

"Our readers will find the double acting, improved pump of J. D. West & Co., one of the best in the market. It is very simple, works to a charm, so that any child may use it; throws a steady, continuous stream, and does not freeze in the coldest exposures, and is unusually cheap. We say this knowingly, and give the testimony of our own accord, without the knowledge or request of the proprietor."—*New York Evening Post, July 1st*, 1863.

"J. D, WEST & CO.: We are pleased to state that the Pumps we had of you about a year ago, have been in constant use, twelve hours each day, and raise for the use of our woolen factory, about 180 gallons per minute. They work with but little power, compared with pumps we have used before, and do not get out of repair, and are satisfactory in all respects.

"DUNLAP MANUFACTURING CO."

Solon Robinson to the Farmers' Club.

Jan. 23.

"No farmer who owns a well or cistern can possibly afford to be without an iron pump. It should be a once a suction and force pump—a perfect little fire engine—such a one known as 'West's Improved Pump.' I speak of this Pump because I happen to know it....to be very simple, durable, powerful and cheap, and it don't freeze up, nor get out of order once a year....I know this, and think I may be doing the farmers good by speaking of it....A boy ten years old can work it, and throw a continuous inch-and-a-quarter stream....It can be made to work in deep wells as well as in shallow ones."

"The undersigned having to use "West's Improved Pumps," cheerfully recommend them as simple, durable, and powerful in raising and throwing water, and for their ease of action, security against frost, and low price, we believe them superior to all others.

"WARREN LELAND, Met. Hotel, N. Y.
"J. W. POMEROY, Yonkers, N. Y.
"JOHN MESSEREAU, N. Y.
"DOMINICK LAWRENCE, Westchester."

From the New York Observer.

"We have had in use for months past one of West's Pumps, which has given us more satisfaction as a force and lifting pump than any we have ever used. It is one of great power, and well adapted for ship's decks, mines, factories, greenhouses, graperies, etc. *The Mining Chronicle and Railway Journal* says: 'It is recommended for its extreme simplicity of construction, great strength, and consequent durability and cheapness of repair. There is no stuffing-box—the pressure being held by a cup packing, like that upon the working-piston, working in a cylinder, fitted for the purpose within the upper air chamber—which we think a great improvement, as stuffing is so liable to be deranged and leak under strong pressure, to say nothing of the loss by friction incident thereto. It has also two air-chambers; thus the action of the valve is cushioned upon both sides by air—preventing water-hammer and vacuum-thump. The valves are very accessible and simply and cheaply repaired. They work much easier than any pump we have ever seen; the 4-inch cylinder being worked by children in wells 100 feet deep, and as they are extremely cheap, as well as simple and strong, we freely recommend them.'"

"CAMBRIDGE MINE, N. C., June 15, 1863.

"J. D. WEST & CO.—Gents: The Pump which I ordered for our mine is received, and put to work in our underlay shaft, which we are sinking. We find that one man will, with ease, lift 50 gallons per minute. We lifted in three and a half hours all the water in the shaft, which measures seven by twelve feet and thirty feet deep, and it was full when we commenced. It answers our expectations in every respect, and our workmen are highly pleased with it. It will do great service with but trifling expense for repairs.

"Yours, respectfully, BURR HIGGINS."

"This may certify, that I have been using, at my manufactory, for the last four years, 'West's Improved Pumps.' I now have in use three of said Pumps, one of which is kept constantly at work, 24 hours of each day (save Sundays), and has been running for the past two years. I pronounce them, unhesitatingly, the best Pumps that have been brought to my notice, having used many others previously. They are simple in their construction, and not easily disarranged.

"N. Y., Oct. 10, 1859. JAS. A. WEBB."

We have plenty more such certificates, but think these are enough. For Pumps, Hose, Pipe, etc., address or call upon

J. D. WEST & CO., 40 Cortlandt st., New York.

Orders may be sent through the AMERICAN ADVERTISING AGENCY, 389 Broadway.

EDDY'S

Kerosene Cooking & Heating

STOVES AND RANGES.

THESE COOKING STOVES WILL

☞ *Bake, Boil, Stew, Fry and Roast,*

With the greatest economy and facility, and without heating the room in which they are used. They are perfectly simple, operating like an ordinary Kerosene Lamp with a chimney, and are the only Kerosene Stoves that burn without smoke or odor.

"We have been perfectly astonished to see what a labor-saving, dirt-saving and heat-saving institution is EDDY'S PATENT KEROSENE STOVE. Taking the cost of running it, and the result attained, it is the best patent in the market."—*Worcester Daily Spy.*

Our Heating and Cooking Stoves are very convenient and economical, especially where a fire is required but a few hours at a time.

Orders for Stoves may be sent through American Advertising Agency, 389 Broadway, New York.

LESLEY & ELLIOT,

Manufacturers, No. 494 Broadway, New York.

Send for Illustrated Circular. (136

KNITTING MACHINES

FOR

Families and Manufacturers,

☞ *Something New and Invaluable for Family Use.*

We offer the public the simplest, strongest and best Knitting Machine in the world.

It occupies but little space—is portable and can be attached to a stand or table, weighs about 40 lbs.

It will knit a variety of Stitches—the breakage of needles is trifling—the cost of needles is insignificant and the most delicate material can be knit pure and spotless, as the needles are not oiled.

Orders for Machines may be sent through the American Advertising Agency,

389 Broadway, N. Y.

Send for a Circular—Agents wanted.

DALTON KNITTING MACHINE CO.,

137] 537 Broadway, N. Y.

WEED'S

HIGHEST PREMIUM

Shuttle Sewing Machine

Has only to be seen and operated to be Appreciated.

Call and see for yourself before purchasing. Please bring samples of various kinds of thread, (such as is usually found at stores,) and various kinds of fabric, which you know the former most popular Sewing Machines either cannot work at all, or, at best very imperfectly.

SUPERIORITY.

over any other Machine in the market will be seen at a glance.

1st It runs easily and rapidly, and is so constructed as to endure all kinds of hard usage.

2d. No breaking of threads in going over seams.

3d. No imperfect action of the feed at uneven places in the work.

4th. The Weed-stitch catches of itself, and will sew from the finest lace to the heaviest leather, and 200 cotton to coarse linen thread.

5th. The Weed Machine will do beautiful quilting on the bare wadding, without using inner lining; thus leaving it soft as if done by hand.

6th. The variety of fancy work that can be done on the

WEED MACHINE,

with so little trouble, makes it equal, if not superior, to six machines combined; for instance. it Binds, Hems, Tucks and Sews on the band at the same time, and in face, the

WEED NO. 2 MACHINE,

as before stated, is equivalent to a combination of any six ordinary machines.

Orders for Machines may be sent through the American Advertising Agency, 389 Broadway, N. Y.

Below we give a few prices:

No. 2. Oil Black Walnut, Ornamented with Hemmer.	$60,00
No. 2. Oil Black Walnut, Hall Case, Ornamented, with Hemmer.	65,00
No. 3. Extra Oil Polished Black Walnut, Half Case, Large Table beautifully Ornamented.	75,00

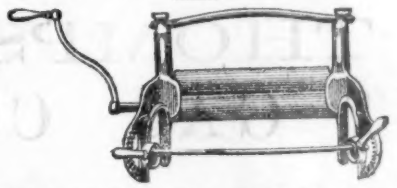
WEED SEWING MACAINE Co.,

136) 506 Broadway, New York.

PUTNAM'S CLOTHES WRINGER.

IT IS THE ONLY RELIABLE

Self-Adjusting Wringer.



No Wood-work to Swell or Split. No Thumbscrews to get out of order. Warranted with or without Cog-wheels.

It took the First Premium at Fifty-seven State and County Fairs in 1863, and nearly double that number in 1864, and is, without an exception, the *best* Wringer ever made. Patented in the United States, England, Canada, and Australia. Agents wanted in every town, and in all parts of the world. Energetic agents can make from $3 to $10 per day.

WHAT EVERYBODY KNOWS, VIZ.:

That Iron well galvanized *will not rust.*

That a *simple* machine is better than a complicated one.

That a Wringer should be *self-adjusting, durable, and efficient.*

That thumb-screws and fastenings cause *delay* and *trouble* to regulate and keep in order.

That wood soaked in water will *swell, shrink,* and *split.*

That wood-bearings for the shaft to run in *will wear out.*

That the Putnam Wringer, with or without cog wheels, will *not tear the clothes.*

That cog-wheel regulators are not essential.

That the Putnam Wringer has *all* the advantages, and *not one* of the disadvantages above named.

That all who have tried it pronounce it the *best* Wringer ever made.

That it will wring a thread or a bed-quilt *without alteration.*

We might fill the paper with testimonials, but insert only a few to convince the skeptical, if such there be; and we say to all, *test* Putnam's Wringer. Test it *thoroughly* with *any* and any others, and if not entirely satisfactory, return it;

PUTNAM MANUFACTURING CO.—*Gentlemen:* I know from practical experience that iron well galvanized with zinc will not oxydize or rust one particle. The Putnam Wringer is as near perfect as possible, and I can cheerfully recommend it to be the best in use. Respectfully yours,

JOHN W. WHEELER, Cleveland, O.

Many years' experience in the galvanizing business enables me to indorse the above statement in *all particulars.*

JOHN C. LEFFERTS, No. 100 Beekman St.

NEW YORK, *January*, 1864.—We have tested Putnam's Clothes Wringer by practical working, and know that it will do. It is cheap; it is simple; it requires no room, whether at work or at rest; a child can operate it; it does its duty thoroughly; it saves time, and it saves wear and tear. We earnestly advise all who have *much* washing to do, with all intelligent persons who have *any*, to buy this Wringer. It will pay for itself in a year at most. HORACE GREELEY.

PRICES—$8, $9, and $10.

Sample Wringers sent, express paid, on receipt of price.

Manufactured and sold, wholesale and retail, by

PUTNAM MANUF'G CO.,

13 PLATT STREET, New York,

BENNINGTON, Vt.,

CLEVELAND O.

WATER AND GAS PIPE.

The Boston Bituminized Pipe Company,

Are now manufacturing and prepared to take orders, for their PATENT PIPE, (from 2 to 12 inches in diamter,) as a substitute for Iron, Copper, Lead, &c., for the conveyance of WATER, GAS, SEWERAGE, &c. &c.

From the testimonials received, and the entire satisfaction it has given those having it in use, we feel warranted in claiming for this pipe over that of any other, the following advantages, viz.:

It is much CHEAPER—has great strength (it having been tested to 500 lbs. to the square inch,) combined with LIGHTNESS, costing less for transportation; the joints are easily made and perfectly tight; it does not expand or contract from different degrees of tempera ture, and is free from *CORROSION* or *CONCRETIONS* forming; does not impart any taste or injurious properties to water, and as far as anything can be said to be indestructible, we deem this to be.

As a GAS PIPE, we say it has no superior. The Lowell Gas Light Co., purchased and laid some of this Pipe last year, and have likewise subjected samples to a test of four month's duration in their dry lime purifiers, with the most satisfactory results, in fact establishing beyond a doubt, its perfect adaptation to the wants and requirements of Gas Companies, specimens of which, together with the statement of O. E. Cushing, Esq., Agent Lowell Gas Light Co., who made these experiments, I shall be pleased to show, and give all other needed information, by applying in person, or by letter, to JOHN L. WEBSTER, Treas.,

Boston Bituminized Pipe Co.,

127] No. 2 Pearl st. House, Boston

AMBROSE SPENCER GILCHRIST.

(LATE CAPT. U. S. V.,)

CIVIL, MINING

AND ARCHITECTURAL ENGINEER,

No. 200 BROADWAY, Office 12.

New York.

Gas Fixtures and House Furnishing

GOODS,

E. V. HAUGHWOUT & CO.,

488, 490 and 492 Broadway.

Corner of Broome street, New York,

Manufacturers and dealers in

CHANDELIERS & GAS FIXTURES,

Have a large and very choice assortment of GAS FIXTURES, which they offer at reduced prices, in view of the recent fall in gold. Their

Glass and Fire Gilt Chandeliers, are of entirely new designs,

And well worthy of attention by those who wish to purchase

☞ *Fine Fixtures for their Houses.*

OFFICE OF WM. DAVIDSON,

INSPECTOR OF GAS METERS FOR THE STATE OF NEW YORK,

☞At the above address.

New York, April 18th, 1864.

* * * * * *

We respectfully invite your attention to an consideration of the justly celebrated and reliable remedy fo DYSPEPSIA, HEARTBURN, DEBILITY and PROSTRATION. The Pro' prietors are proud to acknowledge the unparalleled success which has attended the sale of their valuable preparation, known in nearly every portion of the civilized world as the

"GOLDEN BITTERS."

We risk nothing when we term them a *valuable preparation,* for they are one of the few articles of the present day which are not a humbug; and we are willing and able to satisfy any person or persons who will call upon us, that the celebrated "GOLDEN BITTERS" are a genuine *bona-fide hygienic* article. It is the wish of the proprietors that the virtue of the article be tested before condemning. A decision of their merits by any one who has tried them, is worth a million of purchased bogus testimonials.

For Creating a Healthy Appetite

they are invaluable, and are unequalled as a TONIC. They are mild in their action, and operate by giving *vigor* and *strength* to the system,—not by any change they produce in the solids, but through the medium of the living principle.

They are Purely Vegetable,

being composed of Gentian Root, Calamus, Sassafras, and many other remedial agents of the Vegetable world, all preserved in Jamaica Rum and Sherry Wine.

As a Beverage,

They are the most *wholesome, invigorating* and *palatable* stimulant ever offered to the public. And the fact of their being prepared chemically and scientifically, precludes the possibility of a bitter, unpleasant taste, common to Bitters generally offered for sale. We especially recommend them to LADIES, and particularly to those suffering from

DEBILITY, WEAKNESS, AND PROSTRATION.

Half a wine glass of these "Bitters" three or four times a day, will produce a remarkable healthy change in persons greatly debilitated.

The "Golden Bitters" have been tried and not found wanting. They are put up in our own *Patent* quart bottles, and for sale by Druggists, Grocers, &c., throughout the world. Each bottle bears a fac-simile of the signature of Hubbel & Co.

GEO. C. HUBBEL & Co., Sole Proprietors,

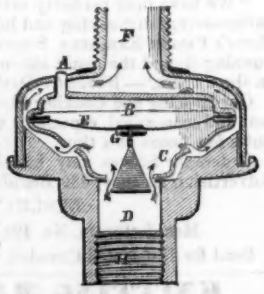
CENTRAL DEPOT, American Exp. Building, New York.

THE GOLDEN BITTERS.—We are not an advocate of stimulants of an alcoholic character; indeed we deprecate this "daily tonic" idea—this "morning toddy" which we see offered in all sorts of shapes as a recuperator, invigorator, revitalizer, &c. As a rule all artificial stimulants are dangerous remedies, and must be taken into the system as you would mercury or arsenic, in very small doses. But we have had an opportunity to try the now well-advertised article known as Hubbel's Golden Bitters, and are frank to say that where the system needs building up, where a stimulant is required to aid nature in restoring a lost appetite and infusing a vigorous action to the debilitated functions, we can recommend these Bitters. Hubbel's Golden Bitters are evidently intended to improve the debilitated human system, rather than to tickle the palate, and are, therefore a harmless and safe remedy o keep in the house.—*New York Weekly Day Book.*

NOTICE TO GAS COMPANIES AND GAS CONSUMERS

THOMPSON'S PATENT GAS CONTROLLER,

The only Self-Acting Gas Controller, Regulator, and Burner Combined which has ever been invented, or known to science.



THE PRINCIPLE UPON WHICH THE THOMPSON'S AUTOMATIC GAS CONTROLLER works is one well known to mechanics, and is simple in its operation.

Within the circumference of a small cylinder below the burner is placed a conical valve attached to a movable diaphragm. The diaphragm rises or falls as the pressure of gas from the pipe is lesser or greater, and the valve acts upon the valve-seat with such regularity of movement that in a difference of from five-tenths of an inch pressure to five inches the variation in flame is hardly perceptible.

The simplicity of its machinery and the nature of the material used in its construction insure its regular action and durability.

In consequence of the uniform quantity of gas which passes the Controller to the burner, there is no waste, and a steady, soft flame is produced, which is important to all who read, write, or work by gas-light. The unsteady flickering blaze which invariably exists when the pressure of gas is beyond the requisition for consumption, has injured the sight of thousands who have been subjected to it.

For street lamps these Controllers are especially valuable, because the pressure varies materially during the night, and in consequence there is a waste of gas, and the light variable.

Improvements have lately been made in the mechanism of the Controller which makes them almost a perfect meter to each burner, and they are now offered to the public with more confidence than ever before.

Reference is permitted to the following named gentlemen—

Col. CHAS. ROOME, President Manhattan Gas Company, N. Y.
C. H. SANDS, Esq., President Metropolitan Gas Company, "
J. H. ADAM, Esq., President New York Gas Company, "
PETER COOPER, Esq., Cooper Institute, "
JOHN A. DUFF, Esq., Olympic Theatre, "

GEO. H. KITCHEN, Inspector of Gas Meters, N. Y
A. L. BOGART, Esq., Gas Engineer.
Col. J. A. SABATTON, Engineer Manhattan Gas Company.
Col. A. J. WHITE, Engineer Metropolitan Gas Company.
J. K. SIMPSON, Esq., Engineer Cooper Institute.

Persons interested are invited to call at the Office, 111 Pearl street, where they can see the operation by pressure guage and test meters

M. L CALLENDAR, Agent
Office, 111 PEARL STREET.

THE AMERICAN METER CO.

Organized under the General Manufacturing Laws of the State of New York.

SAMUEL DOWN, PRESIDENT. HENRY CARTWRIGHT, VICE PRESIDENT. RICHARD MERRIFIELD, SECRETARY AND TREASURER

TRUSTEES.

SAMUEL DOWN, WILLIAM HOPPER, R. H. GRATZ, HENRY CARTWRIGHT, RICHARD MERRIFIELD.
THOMAS C. HOPPER, *Superintendent at Philadelphia.*

This Company is now prepared to furnish WET AND DRY GAS METERS, STATION METERS, GOVERNORS, PRESSURE INDICATORS & REGISTERS, SERVICE and METER COCKS, and all other articles in their line appertaining to the use of Gas-Works.

The combination of Mechanical and Scientific Skill, and the long experience of the several members of the Company, is a sure guarantee of durab ility, and excellence of workmanship. Orders addressed

AMERICAN METER COMPANY,

512 WEST TWENTY-SECOND STREET, NEW YORK,
ARCH AND TWENTY-SECOND STREETS, PHILADELPHIA,
No 23 WEST STREET, BOSTON will meet with prompt attention.

HARRIS & BROTHER, PRACTICAL GAS METER MANUFACTURERS,

Continue, as heretofore, at their old Establishment, **No. 1117 CHERRY ST., PHILADELPHIA,** to Manufacture

WET AND DRY GAS METERS, and all kinds of GAS APPARATUS, and furnish all articles appertaining to the use of Gas Works. ☞OUR WORK WARRANTED—Satisfaction Guaranteed. Orders respectfully solicited, and promptly attended to, by
HARRIS & BRO., No. 1117 Cherry st., Phila.

Messrs. Harris & Brother, Philadelphia Gas Works, February 14, 1857.

Dear Sirs—I take great pleasure in stating that we have found your meters to register with entire correctness, and to be generally of very good quality; the number furnished by you to these works is over 5,000.
JOHN C. CRESSON, Engineer.

Office of the Gas Light Company of Augusta, Ga., March 6th, 1858.

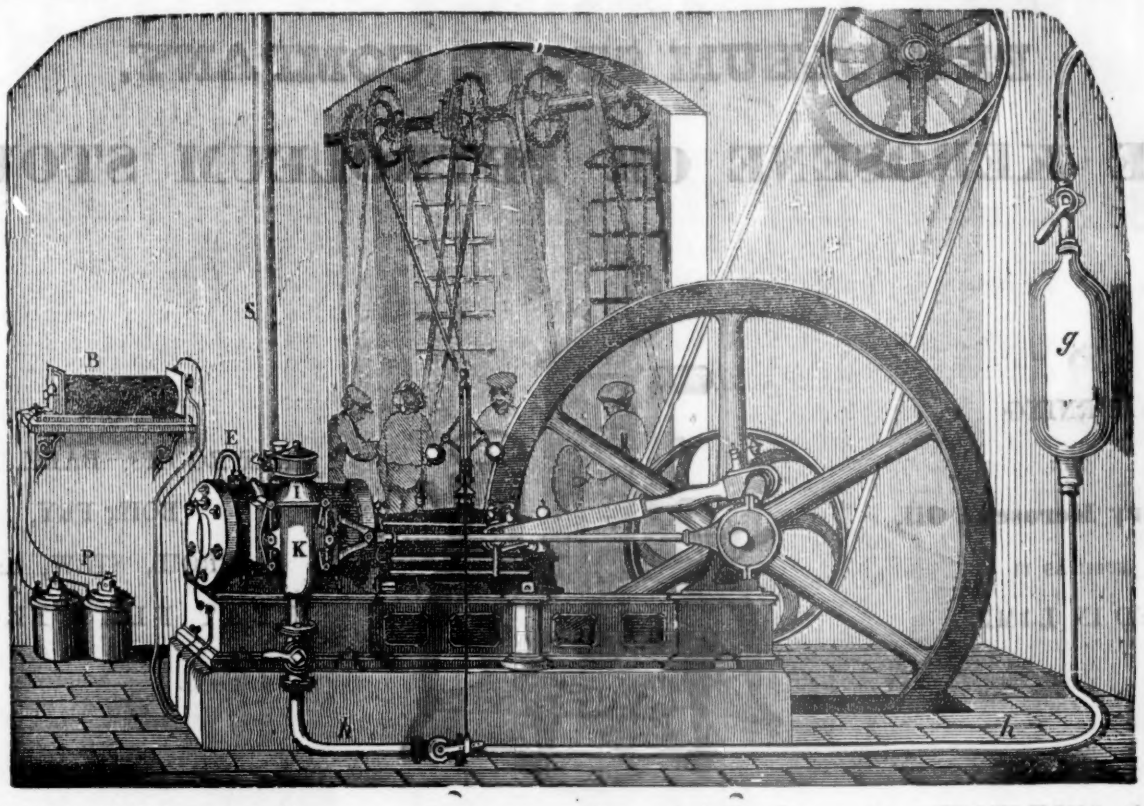
This is to certify that having used meters manufactured by Messrs. Harris & Bro., for the last nine years, we do not hesitate to state they have given entire satisfaction in point of workmanship and accuracy of registration; they are surpassed by none, and equalled by few manufactories in the Union; we have used meters made by other establishments, but our preference is in favor of those made by Harris & Bro., of Philadelphia, Pa.
G. S. HOOKEY, Superintendent of the Gas Light Company of Augusta, Ga,

Messrs. Harris & Brother, Philadelphia. Philadelphia, March 4, 1858.

Gentlemen—We take great pleasure in bearing our testimony to the very superior character of the meters we have received from your establishment. We have always found the workmanship all we could desire, while the accuracy and reliability of their measurement have always been satisfactory. We have used meters made by other parties, and none have given as entire satisfaction as those received from you. We are, gentlemen, very truly, yours, BIRKINBINE & MEARS.

Messrs. Harris & Brother. March 14, 1857

Gentlemen—For the last ten years we have used in the Philadelphia Gas Works, meters made in your factory and take pleasure in expressing my opinion to their correctness. On several occasions I have taken your meters apart, and found the materials used in the manufacture of the same to be as fine quality as used in those imported from Europe, or made by any of the manufacturers in the United States. Respectfully Yours, GEORGE WIEGAND,
spector of GasFittings, Philadelphia



MOTEUR—LENOIR.

LENOIR GAS ENGINE.

This is a horizontal engine, in which a piston, by a connecting rod drives a horizontal shaft.

The gas enters by the pipe "h" from the regulating reservoir "g," (made of vulcanized india rubber,) which regulates the feeding and the branches connected with the gas-pipe.

The tube, K, receives the gas conveyed by the pipe "h," and conducts it to the valve, which opens and closes alternately, by means of a rod moved by an eccentric wheel fastened to the end of the shaft.

Two of Bunsen's piles, P, sufficient to produce the electricity are placed at a little distance from, and in communication with a Ruhmkorff electric apparatus, B. The electric current of this apparatus is conducted by means of insulated wires to the electricity distributor "m," placed on the front of the frame, while the current of electricity and its arrival at the inflammator, inserted at each end of the cylinder, is directed by the movement of the piston-rod, which, by an ingenious combination, impels a small movable slide before the distributor.

The burnt gas, after having performed its functions in the machine, escapes, by means of a valve, through a pipe, S, and the water designed to cool the interior of the cylinder enters through a double passage, by means of a pipe situated near the escape-valve, and goes out by the pipe, E.

A two horse and a half horse Engine are now in practical operation at the Dry Dock Iron Works, No. 435 East Tenth street, near East River, New York, where they are being manufactured, and those interested are invited to call and examine them.

THE LENOIR GAS ENGINE

Requires no Fire and makes no Smoke,

No Noise, no Dirt, and is thoroughly safe.

It is propelled by the expansion of Air, dilated by the combustion of Gas within the cylinder, ignited by the

ELECTRIC SPARK

PETROLEUM STOVE COMPANY.

THE KEROSENE OR PETROLEUM STOVE.

BURNING

THE

Ordinary Kerosene Oil,

SUCH AS IS

USED IN LAMPS.

WILL

HEAT ROOMS, BAKE, ROAST,

BOIL, FRY,

BROIL, STEW, AND

HEAT FLAT IRONS.

This is the ONLY STOVE, yet invented, which burns the common Kerosene, or Petroleum Oil, WITHOUT A WICK and is capable of doing all the COOKING, BAKING, WASHING and IRONING of a large family, as quickly as any coal or wood stove—is neat in appearance, and clean, MAKING NO DIRT OR ASHES—requires no room for stowing wood and coal, is light and portable, and may be used in any convenient place in or out of the house, and is guaranteed to be perfectly safe and free from explosion. This Stove must not be confounded with other Stoves offered under the name of Petroleum Stoves, which do not, and cannot, under any circumstances, burn the ordinary Kerosene, or Petroleum Oil, but burn Naptha, an article as dangerous as gunpowder, in the hands of persons unacquainted with its properties.

☞This Stove is now in use in the Refreshment Saloon at the Fair of the American Institute. Also, may be seen in operation at the Office of the Petroleum Stove Co., 171 Broadway, Room 12, where Orders will be received, and State and County Rights disposed of on liberal terms.

NATHANIEL FORD, Sec'y. *S. T. McDOUGAL, Pres't.*

GROVESTEEN & CO.,

PIANO-FORTE MANUFACTURERS.

499 BROADWAY, NEW YORK.

The attention of the public and the trade is invited to our New Scale Seven Octave Rosewood Piano-Fortes, which for volume and purity of one are unrivalled by any hitherto offered in this marked. They contain all the modern improvements, French, grand action, harp pedal, iron frame, over-strung bass, etc., and each instrument being made under the personal supervision of Mr. J. H. Grovesteen, who has had a practical experience of over thirty years in their manufacture, is fully warranted in every particular.

THE "GROVESTEEN PIANO-FORTE"

Received the highest award of merit over all others at the Celebrated World's Fair!

where were exhibited instruments from the best makers of London, Paris, Germany, Philadelphia, Baltimore, Boston, and New York; and also at the American Institute for five successive years, the gold and silver medals from both of which can be seen at our warerooms.

By the introduction of impro ements we make a still more perfect Piano-Forte, and by manufacturing largely, with a strictly cash system, are enabled to offer these instruments at a price which will preclude all competition.

PRICES.

No. 1, Seven Octave, round corners, Rosewood Plain Case, $275.
No. 2, Seven Octave, round corners, Rosewood Heavy Moulding, $300
No. 3, Seven Octave, round corners, Rosewood Louis XIV, style $325, a fac-simile of the accompaning cut.

TERMS—NET CASH, IN CURRENT FUNDS. Descriptive Circular sent free.